PRESUPPOSITIONS AND PROBLEMS OF SCIENTIFIC AND HUMANISTIC APPROACHES TO URBAN PLANNING

by

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D E C L A R A T I O N

I hereby declare that this thesis has been composed by myself and is my own work.

TO MY FAMILY

V O L U M E I

Containing title pages, lists of contents, abstract of thesis, Introduction, and Chapters one to six.

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This thesis has been developing over several years, in fact since 1970, and the number of individuals who have been involved in it more or less directly is rather large. It is not possible to properly acknowledge their generous help and advice in many difficult turns of the work without rendering this noteinappropriately lengthy. Hence any omissions are not to be interpreted as ingratitude for thanks are extended to all those who in one way or another have offered assistance and guidance.

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C O N T E N T S (in summary)

V O L U M E O N E

V O L U M E T W O

V O L U M E T H R E E

NOTE ON THE STRUCTURE OF THE MATERIAL IN THIS THESIS

Given University regulations regarding maximum thickness of volumes, it has proved necessary to arrange the material in this thesis into three volumes. The last of these contains the footnotes of the main text, two Apendices, and the Bibliography, as outlined below.
It was thought appropriate to assemble and place the footnotes of all chapters in a separate volume rather than append them at the end of each chapter, in order to enhance continuity of reading. A few of the footnotes are unusually long. They were formulated as footnotes

rather than as individual Appendices for the sake of coherence with the themes with which they are associated.

The Appendix to Part II is also located in the third volume of the dissertation, following the footnotes and the Appendix to Part I. It contains some form of glossary of certain rather technical terms used in the main text. It is very frequently referenced in the main text in cases in which such special terms appear as shorthand descriptions of quite specific points of view and philosophical positions. Since no special definition is given for these terms in the main text, the Appendix to Part II is indispensable in avoiding ambiguities in the usage of terms -- a situation which often occurs in philosophical and social scientific discussions. Moreover , some chapters are developed on the assumption that the material contained in that Appendix has been consulted.

Finally, the Bibliography comes at the end of Volume Three and in the main consists of works that have been used in this thesis -- though there are a few titles which appear as potentially useful even if they are not specifically referenced in the text, footnotes, or Appendices. There is also a short Appendix to the main body of the Bibliography comprising material which became available at a late stage in the preparation of the thesis and was therefore impossible to include in the already compiled main list of references.

The arrangement of the main text in the first two volumes was dictated by considerations of volume size rather than structure of the material contained in them. The latter has been conceived in two major parts.

Part One deals with certain general problems of knowledge and traces their relationships to reasoned action in the sense of planning. Part Two focuses specifically on one of the means for systematising and advancing knowledge, viz. models of segments of reality. Volume One contains only a section of Part One -- viz. lists of contents, Introduction, and Chapters one to six. Volume Two comprises the remainder of Part One, and Part Two -- viz. Chapters seven to fourteen -- including the conclusions of this research.

C O N T E N T S (in detail)

V O L U M E O N E

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ABSTRACT OF THESIS

This thesis sets out to explore some of the ways in which the methods of inquiry employed in urban planning tend to guide the perspective taken on substantive concerns in that field. It endeavours to accomplish this task by showing that there are certain underlying presuppositions that are implicitly rather than explicitly accepted by making use of any method of inquiry, but focuses on aspects of models of social/spatial phenomena as these are employed in urban planning as instruments for prediction and control rather than copies of segments of reality--either making existential claims about it or postulating structural isomorphisms.

Urban planning is taken to be a "social practice" within which thought and action are mutually determined through continuous dialectical processes involving the planners and those who are being investigated and affected by plans. The strong presence of a knowledge component in the thought/action continuum of planning makes relevant a range of ontological and epistemological problems linked with the view taken of science and its methods and procedures of inquiry, and with the way the world of man and society and its manifestation in urban life is looked at. It is argued that the way in which society is theorised about has implications for the methods employed in its study and hence for the planning process seen as a process of inquiry.

To the extent that alternative theoretical perspectives on society are possible -- indeed,three such perspectives are identified and explored: naturalism, interpretative or humanistic approaches, critical theory of society -- there are corresponding approaches to "social practice" including the mode of planning to be adopted in the regulation of societal affairs in the city. Technological and humanistic approaches to urban planning are distinguished, the latter comprising interactionist and critical modes. The technological model derives its strength from a policy science approach which is informed by a view of science akin to positivistic naturalism. It introduces a range of sharp divisions into inquiry -- theory from observation, method from substantive content, values and norms from facts as the unassailable foundations of empirical knowledge, ends from means -- which are taken to be unacceptable at least in the realm of ethically relevant action that planning consists of.

Rejection of this conception of a technological planning approach is advocated but this does not necessarily entail rejection of scientific approaches to planning as a whole. Rather, the strictures concern the particular view of science, and its methods and procedures, which informs the technological model. It is that view of the "logic of science" which is held to impose unnecessary restrictions on what is to count as legitimate knowledge of the world, and its replacement seems particularly urgent. The conceptualisations that are to be found in the "newer" philosophy of science are taken to provide plausible alternatives to the "old empiricism", though they do not afford as unified a view of knowledge as may appear at first glance. Such views of science, however, render the application of scientific methods and procedures in urban planning much more credible.

The view of knowledge which the author finds most convincing is one that recognises the important role played in it by human contribution; accepts the many culturally given elements in any cognitive endeavour; acknowledges the strong presence of metaphorical elements in theories and models of aspects of reality; concedes that there are alternative equally valid ways of conceptualising experience and that assessment of their validity as correspondence with "objective" facts may have to take second place in the light of considerations such as convenience, instrumental effects, or aesthetic criteria; regards a strict separation of the realm of theory from the realm of observation as untenable; and does not suffer epistemological shock from any consequences of relativism that such views might entail. For this is accepted as part of man's epistemological predicament. Such a perspective on knowledge would have implications for the proliferation of theories and models accounting for the same set of phenomena, and for pluralism and tolerance in goals and methods of inquiry; and implications for the way in which knowledge is to be related to "practice" in the realm of ethics, politics, and planning.

I N T R O D U C T I O N (*)

It is often said that the first sentence of an Introduction to a dissertation must capture and declare the "essence" of the work. If this should be the case then it has to be admitted that it is exceptionally difficult to meet such a requirement given the nature of this work. It is guided by many-sided interests and introduces multiple perspectives on seemingly disparate domains and this renders any attempt at constructing one statement which encapsulates its results highly problematic if not outrightly impossible. This situation might illustrate one of the main issues that are raised below regarding the conditions in which some methodological rule or conventional procedure can be applied to some substantive realm without giving due regard to the question of compatibility of the perspective introduced by that procedure with the nature of that to which it is applied and without examining what is presupposed by adopting such a perspective on the subject matter of interest.

It could be said that the thesis is about views that are taken for granted and not inquired into in the course of theoretical and "practical" activities in urban planning.(1) Its principal concern is with

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(*) The footnotes of this Introduction as well as those of all other chapters are to be found at the end of the main text and before the Appendices and Bibliography. They are arranged at the very beginning of Volume III of this work.

the ways in which urban planners perceive the world, theorise about it, and engage in attempts to control and change it. These are taken to be founded on a range of implicit presuppositions regarding the nature of that world and the most appropriate methods and procedures that are to be applied in mastering it. A number of distinctive themes emerge from these considerations, which set out the kinds of presuppositions that are associated with particular perspectives on the world of man/environment relations in the city.

The idea that presuppositions guide and sustain systems of beliefs about the world is not very new though it has recently acquired prominence in the context of the developing "newer" philosophy of science with its talk of "paradigms", "world views", "Weltanschauungen", "research programmes";[2] and related concepts such as "problématiques","language games",etc., bearing close affinities with the hermeneutic philosophical tradition.[3] The main issue seems to be that scientific theories exist only within an unarticulated and ascientific "Weltanschauung" or world view which not only renders the theories meaningful but also indicates to the scientist what to see in the world. This world view is in turn sustained by the research results which it fosters. It is underlain by unquestioned or unquestionable "axioms" or presuppositions which could be regarded as "incorrigible propositions" (MEHAN and WOOD, 1975: ch.1). Their status may be taken as loosely analogous to that of "formal truths"[4]: any empirical information denying mathematical truths of the sort: "4+4=8", is explained away (POLANYI, 1958: pp. 190-193; 257- 261).

Failures do not challenge the conceptual system itself: beginning with the incorrigible belief in science, all events <u>reflexively</u> become

evidence for that belief. For instance if results of the kind: "4+4=9" are obtained in attempts to apply the methods and procedures of the natural sciences in the study of social/spatial phenomena -- say, failures of models to predict, or theories which break down -- then various reasons are invoked to explain such failures. Thus, it could be argued that the empirical evidence employed was not appropriate or in the right form; or that the categories of the data were not correctly defined so as to correspond conceptually with the theoretical categories; or that existing knowledge of some subject matter of interest is incomplete; or that the methodological apparatus and instruments used in inquiry are not sufficiently refined; or that the subject matter being investigated is inherently complex and difficult to analyse and study; etc. Such considerations reaffirm the reality of a world in which science is a fundamental element: contradictions serve to re-endorse "incorrigible propositions".

One such proposition is the assumption regarding the existence of stable material things which remain the same over time irrespective of the position of the observer and his/her identity.(5) An adherent to the Copernican system taking the sun as a star rather than a planet recognises an error in the earlier Ptolemaic system which regarded the sun as a planet. He does not question, say, the constancy of the sun itself, only of his beliefs about it. Failure of the sun to be as believed does not question the reality of the system of basic beliefs. However, assuming the permanence of objects eliminates alternative formulations. It is an assumption which cannot be corrected; it is taken for granted. If there are alternative definitions then <u>one</u> must be selected as real. In so doing, the others are automatically excluded, revealed as false and thus become

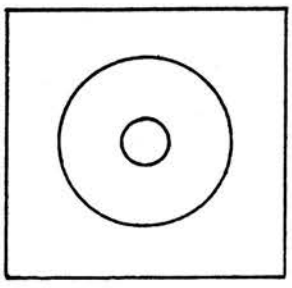
unavailable. The possibility of alternative descriptions of one and the same set of phenomena -- as suggested in the "newer" philosophy of science -- might be explained away by invoking errors in perception, bias and prejudice in knowledge, the idiosyncracy of the observer, etc.

Alternative descriptions are not regarded as features of the object itself or of the relation between the observer and the object of his study. Since alternative accounts are eliminated in this way, what is accepted performs the role of evidence for the assumption regarding stable material things, which rendered that account appropriate in the first place. Thus, some frame of meaning, system of beliefs, world outlook, and the like, with its presuppositions guides what is to be taken as a meaningful assertion; and this assertion in turn serves as evidence for the appropriateness of that frame of meaning. Presuppositions guide research that validates them, and that research justifies itself afterwards in the reality it has created. This essentially <u>reflexive</u> process is an aspect of the reasoning referred to as the hermeneutic circle.(6)

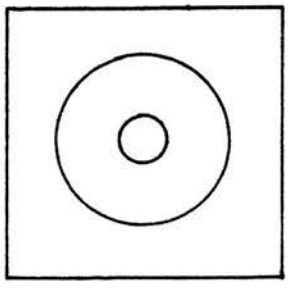
This involves a continuous oscillating movement between meaningful parts or "data" and hypothetical "whole", or conceptual framework, or frame of meaning. The way in which the "parts" are looked at is determined by the hypotheses regarding the "whole"; while the "whole" and the hypotheses and presuppositions that are associated with it are in turn intelligible only in the light of the parts. As a result there is no way of carrying out independent tests of hypotheses about the"parts" for the "parts" themselves are perceived in terms of those hypotheses and presuppositions: they are <u>constituted</u> by them. Hypotheses can be adjudged in terms of their coherence and plausibility within

a general interpretation of some frame of meaning, totality, paradigm. Reflexivity affords grounds for believing that some piece of knowledge is valid. Assuming that science, as one among many modes of knowing, yields knowledge of facts, provides grounds for believing in the results from cognitive endeavours undertaken within that mode of knowing. Presuppositions of one mode of knowing, say science, furnish criteria for assessing other ways of knowing. Taking some mode of knowing as "incorrigible" enables those who accept it to eliminate other modes as false.

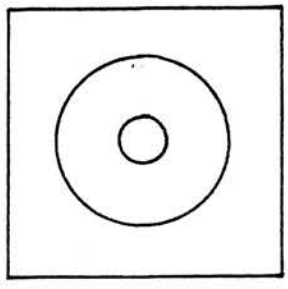
Given its range of presuppositions and implicit assumptions, some of which are culturally provided, some mode of knowing -- say, science -- yields a coherent system of knowledge as revealed upon analysis. Its characteristics are sustained by the methods employed by the inquirers and scientists in the study of their subject matter. There is an interdependence between method of inquiry and its substantive concerns to the extent that particular methods introduce their own perspective on some subject matter, viz. presuppose some particular way of looking at it which derives from the frame of meaning within which such methods have developed and are employed. Consider the following visual metaphor.



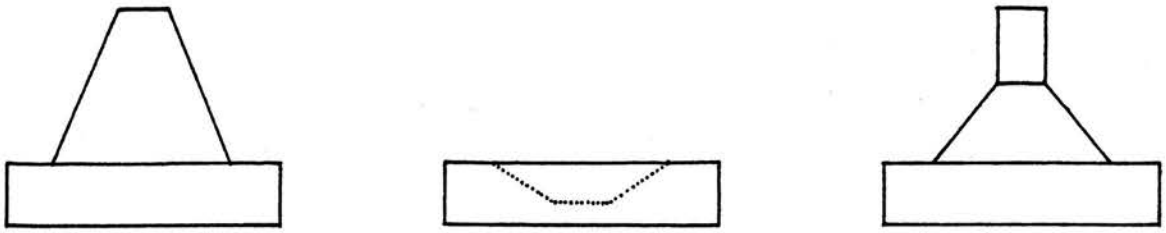
(a)truncated cone



(b)indentation



(c)reversed funnel



(a_1) (b_1) (c_1)

The same drawing (or "facts") may be interpreted in a number of different ways, but without interpretation it is not a meaningful object. The statement which provides an interpretation does not only accomplish the task of reporting on the drawing but also constitutes it as a reasonable object; and at the same time justifies its presence as part of that object. It is not necessary to produce the corresponding drawings (a_1), (b_1), and (c_1), above, to illustrate to the observer what a truncated cone, an indentation on a plaque, or a funnel turned upside down looks like. The statements accompanying (a), (b), and (c) in themselves perform this role. The statement "indentation" immediately results in the modification of the perspective taken on the preceding drawing whose corresponding statement dictates perception of a protruding object (truncated cone).

A method of inquiry may be said to operate in an analogous manner: it constitutes the subject matter to which it applies as meaningful within some conceptual framework, and also justifies itself as part of its substantive concern. For instance, constructing a model[7] -- as one of the methods of cognitive inquiry -- to study and systematise a set of empirical data in some domain of investigation introduces a particular perspective on those data which constitutes them as meaningful within some broader theoretical context or paradigm. In so doing the model

justifies its presence as part of those data, there being no independent reason for its existence apart from them.

The method employed in the study of some subject matter finds its justification in the context of some frame of meaning within which results derived by applying the method are intelligible. For example, a method for the "intuition of phenomena" as may be expounded in the framework of phenomenological philosophy(8) produces results the use of which is conceptually excluded from the frame of meaning of empirical science. Similarly, a model of some domain of empirical phenomena conceived according to a realist (9) view of science can find no place in the context of the rival positivist(10) epistemology. If the realist argues that models are potentially true copies of usually unobservable underlying structures and mechanisms that are causally productive of the range of phenomena being modelled -- thus making existential claims regarding the reality of the entities referred to in the model -- the positivist finds no place in his version of science and scientific research for models so conceived.(11)

Paradigms or frames of meaning reflect particular points of view, ways of looking at things in the world of nature and of man and social life. They guide the process of cognition and organisation of knowledge and render the results of inquiry intelligible within their context. But they also give rise to the problem of moving between perspectives in the sense of establishing rules for mediating between different conceptual frameworks. The problem of incommensurability of paradigms arises as a result of the way in which each perspective guides thought and excludes other ways of looking at the world. Each may be said to possess its own vocabulary of explanation, its own language for conceptualisation, and its own rules and procedures for acquiring and

validating knowledge; and all of these features reflect its consistency. But these characteristics are not the result of the passive observation of nature. Rather they are socially produced and sustained rules of procedure and method decided by some community of scientists. This does not mean that scientific knowledge emerges as a subjective construction. There is social, historical and cultural influence on knowledge and on the rules and procedures that are conventionally agreed upon for its acquisition and legitimation. But given these elements and other presuppositions of a metaphysical and moral nature, questions of objectivity and truth of knowledge can be settled unequivocally.(12)

Frames of meaning provide the context or "whole" within which methods, concepts, and social practices become meaningful and are intelligently and intelligibly connected with other methods, rules, procedures and practices. Each frame of meaning involves presuppositions, more or less well conceived, regarding the nature and grounds of knowledge and the kind of world which constitutes the subject matter of inquiry. It attempts to discover what these presuppositions are by acquiring knowledge which is inevitably founded on them. This renders the problem of knowledge obtained within some frame of meaning a hermeneutic task. It may be said to involve understanding and interpreting the empirical material within a broader cultural and historical context of social practices, metaphysical assumptions, systems of beliefs and forms of life. This task would involve the inquirer in an act of relating parts -- i.e partial aspects of some substantive realm, methods and procedures of inquiry, etc. -- to wholes in the sense of conceptual frameworks.

Mediating between different frames of meaning in order to compare and assess one against another may be impossible if such frameworks are conceived as overly unified, self-contained, closed systems of thought. However, if they are not taken as discrete conceptual universes each excluding all others but are seen as part of man's cultural and cognitive tradition, then there may be grounds on which to argue that perspectives are not created independently, unrelated to antecedent knowledge. Rather they emerge as critiques of existing frames of meaning and in order to criticise they presuppose knowledge of the "language" of those other frameworks. Rules, conventions, procedures and methods fostered by some paradigm as a set of social practices cannot be learned in isolation from other alternatives that are replaced or discarded by its adoption. It is necessary to learn what a frame of meaning is in order to learn what it is not.

This argument seems sufficiently convincing to justify discussion of alternative perspectives on urban planning and of their taken-for-granted, unexamined, and often mis-specified epistemological and methodological tenets which originate not so much from empirical as from axiological predicates derived from assumptions about the world and everything in it. Thus, advocacy of systematic theorising and model building for planning is to be seen as part of a broader framework of methodological naturalism in the social sciences.(13) This view takes as unproblematic the application of the methods and procedures of natural science to the substantive domain which concerns planning, which must be regarded as essentially social(14) in nature Humanistic (15) criticisms of this view take many forms some of which are investigated in the context of the ensuing discussion, labelled as "interpretative" and "critical" -- but these are conventions adopted

in this thesis, and their meaning will be illuminated in the course of the argument.

Firstly, the humanism of the pragmatists[16] revolves round a more human-centred version of science and its process of inquiry, allowing for the interplay between experience and human interests in attaining particular ends. Secondly, there are versions of humanism which focus on the category of <u>meaning</u> as distinct from the category of <u>being</u> and advocate that inquiry into matters of social life should concentrate on the former and should involve interpretation and understanding which is an approach distinct from the methods and procedures of the natural sciences.[17] Finally, there are humanistic theories of society (and planning) which accept the scientific contribution in the study of social life but confine it to limited and specific functions in the whole edifice of the knowledge/action continuum. They combine this with the introduction of interpretative categories of meaning as well as with social criticism.[18]

These perspectives are examined and assessed against a normative conception of urban planning which takes it to be a "social practice" within which knowledge and action guided by it are mutually determined. That it is necessary to know in order to act appropriately is seen as a corollary of the definition of planning as reasoned action. Consequently, questions about the nature of knowledge and the procedures and methods through which it is to be obtained and validated acquire particular relevance in planning. This is so, of course, not only assuming that planning will develop and employ its own body of knowledge, but also in circumstances in which knowledge enters planning from other cognitive realms. For in the latter case it is necessary

to know whether such knowledge is relevant in the field of planning and, even more important, whether the presuppositions upon which such knowledge is founded are compatible with the "model of man" that is accepted as most appropriate in the field. These requirements inevitably involve the planner qua social/spatial theorist in the full range of epistemological questions that are to be settled prior to calling some utterance a piece of knowledge.

However, it is not the problem of knowledge itself that should preoccupy the planner most but rather the ways in which knowledge is to be related to action. It is in this area that the epistemological questions should prove particularly vexing. This is because the relation of knowledge to action involves problems of"practice", that is, problems relating to ideologies, political and moral beliefs, and negotiation and bargaining among interest groups in society whose concerns are affected by proposed courses of action. (i) The presence of agents, such as planners and administrators, who act purposefully with some ends in view as well as rationally within the social context of urban life to effect changes in it; and (ii) the application of knowledge of this social context as a subject matter in order to develop prescriptive statements of how such changes are to be brought about, are characteristics of planning that might provide grounds for claiming that there are affinities between planning and technology or applied science.

The mechanistic metaphor which informs a problem-oriented (as opposed to a process-oriented) technological approach to planning should not be regarded as shocking in its extension to society. A large number of theoretical schemes and models are developed within such a mechanistic

frame of meaning.[19] Moreover, the predictive problems of technological approaches are not totally dissimilar from forecasting uncertainties in urban planning. Predicting how some mechanical construction will operate within an environment is often a highly complex affair characterised by a high degree of uncertainty in prediction. It is also impossible to take for granted that the construction which ensues from some technological solution to a well-defined problem will in fact attain the social goal which prompted its undertaking. The many undesirable consequences that have often followed some technological breakthrough illustrate this point (REIN, 1976: p.265). Thus, it could be argued that planning is to operate on the principles of technology, seeking solutions to individually and clearly identified social problems (POPPER, 1957/1961).

In a conception of planning founded on the model of technology, what <u>is</u>, i.e. the empirical knowledge of the world, is strictly separated from what <u>ought</u> to be. Specific goals which guide the rational search for means to satisfy them are supplied externally to the process of inquiry. The task of planning becomes one of carrying out disinterested, value-indifferent analyses of facts; applying positive knowledge of the world to predict consequences of combinations of means which satisfy stated ends; assessing the results on some measurement scale of utilities to arrive at firm choices; providing these as information inputs to the decision making process which is essentially political and outside of "planning proper"; and charting the implementation and phasing of the proposed course of action. In this account, the goals of planning cannot legitimately enter into scientific discourse for they are sociologically relative, pertaining to the domain of individual preferences rather than relating to universally acceptable norms whose pursuance has specific empirical implications.

However, there are fundamental differences between planning and technology which cannot be intelligently reconciled. Firstly, there cannot be clear separation between means and ends -- in a way which coincides with the distinction between facts and values.(20) Secondly, goals in planning are never well-defined and single as in technological problems. Thirdly, failure of some plan is not always traceable to the plan itself for it may be a question of wrong planning or ill-conceived implementation. Fourthly, the experimental testing of action hypotheses cannot be performed with any acceptable degree of accuracy comparable to that attainable in, say, wind-tunnel experiments. Models of the urban structure are often employed as vehicles for testing action hypotheses to trace their consequences for some system of interest. This practice gives rise to a number of difficulties associated with the construction and use of such devices and the results often do not justify the considerable effort and expense involvedin these tests.(21) The application of conclusions from such experimental tests to the real world is not warranted to the degree that the use of scientific "instruments" should be expected to make possible.

However, the major drawback of such a technological approach is the nature of the connection it postulates between knowledge and action: these two aspects of planning are seen as clearly distinct. There results a separation of theoretical from "practical" questions and their reconciliation seems to be effected by way of some form of political and elite domination in the absence of active, rather than iconic, public participation(22) in a dialectical relationship with the planners and decision makers. The view of science which most often informs the technological conception of planning and policy

making is some version of positivistic naturalism.[23] This view falls among the conceptions of science which do not espouse the paradigm view of scientific knowledge and reject the strong connections between form and content of inquiry that were discussed above.

It takes methods as neutral, atheoretical instruments whose application in research does not alter in any way its substantive content. Moreover, it regards cognitive inquiry as a one-way process from the environment (nature) towards man and rejects any interaction between the knower and the known. It differentiates sharply between facts, as the unassailable foundations for knowledge, and evaluative, moral, ethical and political issues which are regarded as relative to sociological circumstances and as arational, viz. not amenable to scientific investigation. One of the peculiarities of this account is that while it postulates moral relativism it rejects cognitive relativism at the level of meaning. There follows that discussions of factual questions of means arrangements are to be kept strictly separate from questions regarding moral and political consequences of such proposals for action, the latter being studied in a detached, value-neutral, and objective way following universally valid canons of"scientific method".

But is it possible to meaningfully divorce the positive from the normative and ideological aspects of knowledge and action in planning? The negative answer that is given in this thesis to that question[24] seems to be corroborated by the developments in the "newer" philosophy of science and corresponding reformulations of the conception of knowledge in the social sciences. Thus, the acceptance of science as an essentially social activity, the recognition of the strong

presence of culturally and ideologically given elements in knowledge of the world of nature but especially of the world of man and society, the identification of guiding interests in cognition, tend to suggest that the kind of pure and value-neutral knowledge of social life founded on independent, theory-free facts -- according to the claims of most positivist/naturalists -- is unattainable.

The alternative conceptualisations of the relationship between knowledge and action that were mentioned above tend to reject this view of technological planning and postulate a much closer relationship between theory and method, facts and values, knowledge and political and moral decisions, theory and "practice", and hence the "planners" and the "planned". Their humanistic interests direct them to either eliminate or strictly limit the function to be performed by science in planning. Thus arises the controversy between two opposing attitudes in planning societal arrangements, conventionally referred to as "technicism" and "humanism".(25)

The former takes for granted the capabilities of science (and technology) to tackle even the most intractable and perennial problems of humanity. Such a belief in the pragmatic benefits of instruments devised by human beings for the solution of human problems seems to permeate the field of "social engineering". It charges humanism with romanticism, sophistry, and lack of the "pragmatic or instrumental spirit" which is seen to pervade all human endeavours: from the highest cognitive realm of scientific theorising to the simplest mundane activities and practical projects, survival, and adaptation to a changing environment. This is because humanism stresses human values and ideals, the meaning aspects of social life, which it takes as <u>irreducibly human qualities</u>

that are incapable of being captured or even taken properly into account in the scientific/technological approaches to the planning of societal affairs. Such approaches are seen as eroding values pertaining to culture, art, freedom and personal liberty, and the private enjoyment of "the good things in life".

Humanistic criticism, in its basic form, expresses fear of collectivist/technological methods applied in the planning of human arrangements because it takes these to constrain unnecessarily one of the most treasured human values, that of the individual's freedom in his environment. Moreover, it views such approaches as suppressing the individual's right to determine the course of his/her life unimposed by the institutionalised domination effected by way of a technology inspired planning which excludes the dialogue and communication with those concerned from the processes of rational/scientific determination of appropriate means which are to satisfy given ends. Humanism stresses dialogue and communication which is seen as excluded from a scientific perspective on planning.

Technicism is attacked not necessarily as something concrete but rather as an attitude which has developed as one aspect of a collective mentality characterised by a set of unconsciously built-in, taken-for-granted presuppositions. As a total moral <u>outlook</u> the scientific/technological attitude is not immediately obvious but has to be brought to the surface and to the consciousness of those who implicitly accept it through enlightening criticism which will hopefully result in the emancipation of the "planned" from forms of accepted domination. Critical Theorists raise this issue most emphatically. They concur with other humanists in rejecting technology-inspired approaches to

planning as employing "techniques" for manipulation and control of social life in the pursuit of some goals, in a way which deprives human agency and volition of its status as a primary ontological category.

The belief that science and its conceptual and methodological apparatus can and ought to be employed in the study of all aspects of the world that might interest man is not a claim that can be justified by scientific reasoning. Rather it is an 'a priori' assumption or "prior philosophy" which appears to guide a way of looking at the world. The same status may be attributed to the claim that whatever can be said to make a claim to knowledge of social life is to be acquired and validated by employing the methods and procedures of the natural sciences. In this sense, methodological naturalism may not be claimed to have "objectively" sounder foundations than the humanistic approaches which place emphasis on interpretative categories. Thus, naturalistic methodological programmes advanced by, say, Popper, Quine, or Marxist historicists, may be taken as equally valid with humanistic programmes with respect to the grounds on which they justify themselves.

Nonetheless, there are good reasons to argue that humanistic approaches tend to preoccupy themselves with meaning (ideal) categories of social knowledge and as a result they tend to neglect those aspects of social life that are the result of processes of interaction involving material concerns. Relations of power and authority, of work, of institutions, of material production cannot be overlooked in any plausible account of aspects of social life. These issues are taken into consideration in the work of the Critical Theorists, though the extent to which they are successful in their synthesising undertakings is subject to much controversy.

To argue in favour of some peculiarly humanistic approach to the study of "theoretical" and "practical" aspects of planning need not entail agreement with more or less extreme views of humanists such as Dilthey, Heidegger, or Gadamer who appear to advocate wholesale rejection of all methodological programmes informed by naturalism. The alleged uniqueness of human episodes, and the introduction of meaning categories do not justify total rejection of any form of scientific study of social life. The issue seems to be whether the view taken of science and its methods and procedures is an adequate or appropriate one for the particular requirements imposed by the social subject matter of planning.(27) The conception of science advanced in the "newer" philosophy of science seems to offer greater flexibility in handling questions of value and ideology -- though it may still be regarded as fostering at least in part the non-participatory, paternalistic attitude of the expert/adviser as a "producer" of knowledge and plans for the "consumption"of the public.

In discussing the areas of potential contribution of science in urban planning, increasing attention is given to the constructs that are known as models for these are often said to constitute an essential component of "scientific method", but also because they are widely used vehicles for theoretical formulation and conceptualisation in research for planning. Planners seem to take a pragmatic view of models as more or less appropriate, useful, convenient instruments to be employed in the context of the planning process. They adjudge such devices in terms of their performance in forecasting, control, monitoring plan performance, testing action hypotheses, and the like. They do not often concern themselves with the substantive content of these constructs or with the range of implicit ontological and

epistemological presuppositions that underlie their formulation and application.

Indeed, in its original conception -- several years ago -- this thesis set out to investigate various contentious issues connected with the use of models of the urban structure in the planning process, their advantages and theoretical problems, and the assessment of anticipated benefits of model use in comparison with what was actually achieved. Most of these questions were not expected to require any analysis which went beyond the confines, say, of operations research or geography -- these being disciplines in which the use of models appeared highly systematic and more or less an integral part of their processes of inquiry. As the research progressed it became obvious that the investigation had to enter other domains of knowledge which were dealing with such issues at a much more abstract and general level. This had an effect similar to opening Pandora's box of highly disputed and hotly debated questions in the philosophy of natural and social science, epistemology and methodology.

It thus became necessary to extend the investigation into such areas as was thought appropriate in order to gain the necessary insights to substantiate a number of claims that are to be made regarding the nature and cognitive status of models, their role in scientific inquiry, and the presuppositions that underlie their development and use in urban planning. The investigation has revealed that models are wrongly seen as neutral instruments which accomplish specific objectives. The way in which a model is conceived has implications for the view taken of science and its method of inquiry, and vice versa, and is also founded on a number of presuppositions of a

metaphysical nature. It is attempted to expose such implicit and taken for granted assumptions though the task is rather greater than the scope of this thesis and hence the discussion is necessarily restricted and selective.

Given the interdisciplinary nature of planning, many perspectives intersect in the study of the city and urban life each of which is characterised by its own sub-culture, social practices, and disciplinary viewpoints. Consequently, it is not possible to cover all aspects of models that may be of relevance in planning in a study such as this. Three research traditions are singled out and the models that are developed within these are investigated in terms of their epistemological and philosophical debts to Logical Positivism and their connection with the guiding metaphor of the machine.(28) The conception of science advanced in positivist philosophy is 'par excellence' that which promotes a technological approach to the planning of societal affairs.

The role of models, analogies, and metaphors -- these being terms referring to essentially different things -- is seen as a highly important one not only in its heuristic contribution to inquiry but also as providing knowledge-extending devices. Human thought and knowledge is taken to be frequently based on metaphorical relations which bring together two seemingly disparate items or domains to produce a new reality out of their fusion. Social theories are said to perform this metaphorical task. Moreover analogical relationships between ideas are frequently the source of insightful theoretical conceptualisation in science. Traditional views of science allow only "objectivist" methods in acquiring and validating claims to knowledge. This tends to create a situation in which the way in which theories are invented is not

accounted for -- viz. what is referred to as "the context of discovery" -- and the process of discovery is often delegated to the realm of psychology and divorced from "scientific method" proper which is allegedly concerned with problems of the logic of justification.(29)

These views which are associated with the positivists' "logic of science" (but also with other positions) is criticised mainly from two quarters: (1) Those who accept "objectivist" methods but seek to incorporate into "scientific method" an account of discovery as well as justification. One set of views referred to as realism takes models (and analogies) as providing the linking medium between theoretical invention and justification.(30) (2) Those who regard scientific knowledge as a social activity sustained by some community of scientists with its own rules of practice and procedural conventions; and consequently as not independent of culturally and historically given elements. They regard models as devices which must maintain their "as if" qualities, their fictionalism, if they are to provide an awareness of the metaphorical element in what is taken as literal.

The distinction between those two broad views is often referred to as the dispute between "realism" and "instrumentalism".(31) It relates to a fundamental issue in the philosophy of science which concerns the way in which knowledge is conceived: (i) as the product of disinterested contemplation of individual scientists objectively and passively observing nature and formulating descriptions which are to correspond to it -- much like a picture is to correspond to real appearances; (ii) as a social product and part of the cultural tradition of man, which is developed and redeveloped and adjusted to serve particular interests such as prediction and control --

knowledge whose understanding must be related to the specific socio-cultural context within which it arises. As will become clear, this thesis sides with the second view, but it should be stressed that there are many different philosophical formulations that could be labelled instrumentalist and hence the term is not unambiguous. The particular conception of science that is accepted in this thesis will become clear in the course of the ensuing discussion.

Taking nature as known externally by the behaviour it exhibits and man and social life as known internally by way of interpretatively understanding his motives, intentions, feelings, reasons, etc. for action would result in a complete separation of man from his environment as an ontological belief. This is an absurd conclusion to reach in seeking a conceptual framework for knowledge guiding action in planning -- a field which essentially concerns itself with the interrelationships between man and environment. It is however as unacceptable as the brand of positivistic naturalism which rejects any distinction between man and nature. Neither of these views may be shown to be supported by the implications of science. If a method of human studies is required to be informed by hermeneutics on the dialogue model of knowledge, then the necessary understanding of social life cannot be meaningfully divorced from an understanding of the ways in which man's environment impinges upon his conduct and the ways in which man affects and conducts himself towards the environment.(32)

The discussion of the above issues is carried out at an often abstract level of philosophical discourse and there may be occasions where the need for concrete examples may be strongly felt. However, the extent

of the material that had to be covered was such that any significant additions to an already substantial piece of work would not be to its advantage. Philosophy is drawn upon as a resource rather than contributed to, the main concern of this thesis being the epistemological and methodological issues arising from the adoption of scientific methods and procedures in urban planning, the alternative conceptualisations that may be claimed as potential replacement for science, and the range of presuppositions underlying these perspectives.

No claim is made regarding the possibility of "presuppositionless enquiry"; even phenomenologists who first sought to achieve such investigation seem to have discarded this principle from their methodological programmes. In fact it is argued that there can be no inquiry without some implicit presuppositions which reflect the contribution of "prior philosophies", the culturally and historically deriving elements in the production of knowledge of the world. Hence it is necessary to know what perspective on society is associated with particular methodological approaches prior to adopting some one of these in acquiring and validating knowledge to guide action in planning.

The philosophical orientation of this work and its attempt to introduce a planning perspective into several apparently disparate areas of cognitive endeavour exposes it to criticism from two directions. The pragmatic planner might find the material and its handling at best loosely related and at worst irrelevant to the field of planning. The philosopher, scientist, or social scientist might find the planning perspective at best unorthodox and at worst odd or even misdirected. This is an inevitable risk connected with this type of synthesising

perspective which draws on many seemingly unrelated domains to create a different reality. It is conceded that disciplinary subdivision in knowledge has considerable advantages for division of labour, specialisation and in-depth investigation, and economy of thinking ensuing from established taxonomies. However, it also carries with it the luggage of historical contingency, social practices and conventions, and cultural affinities. These interests tend to organise knowledge into distinct categories which are inevitably human constructions. They carve out segments of the "seamless web" of knowledge -- to borrow Quine's famous phrase -- and study it from their own point of view.

Planning is an interdisciplinary subject which must introduce a synthesising perspective if the various disciplinary contributions are to cohere within its frame of meaning. Hence as an interdisciplinary synthesis planning should not find expansionism incompatible with its concerns, or contemplation beyond pragmatic tolerance. Feyerabend's account of scientific education and the drawing of disciplinary boundaries provides ample warning of the stultifying effects it might have upon the advancement of knowledge (FEYERABEND, 1970: p.76):
"First a domain of research is defined. Next, the domain is separated from the remainder of history (physics, for example, is separated from metaphysics and from theology) and receives a 'logic' of its own. A thorough training in such a logic then conditions those working in the domain so that they may not unwittingly disturb the purity (read: the sterility) that has already been achieved. An essential part of the training is the inhibition of intuitions that might lead to a blurring of boundaries".

It is hoped that the ensuing forays into the realm of philosophy and science will not be held against this work. For neither the social scientist nor the practitioner of an art can promote his interests in knowledge, accomplish his tasks properly, and improve on his methods of studying his subject matter unless he decides to become seriously involved with and think out the deeper implications of the phenomena with which he has to deal. Conceptualisation and broad schematisation is not possible unless a sufficiently abstract and global view is taken of some substantive realm. To this it might be objected that any directions or schemata that may ensue from this kind of exploration would be liable to collapse in the light of more detailed analyses. This is conceded; however this approach has been adopted as a pointer for future work rather than as a conclusive statement. If there is no initial direction to criticise, criticism cannot operate. But would knowledge advance in the absence of critique?

PART ONE

Planning, Humanism, and Science.

C H A P T E R O N E

Metaphors, paradigms, and forms of social thought.

C H A P T E R O N E

Metaphors, paradigms, and forms of social thought.

1. The paradigms of science.

2. The man-environment relationship and fundamental forms of social thought.

3. Implications for approaches to the study and planning of the environment.

1. The paradigms [1] of science.

The world may not be structured in the same way that our understanding of it is organised. The necessity to file the continuously accumulating contents of human knowledge has resulted in the creation of scientific disciplines (ACKOFF and EMERY, 1972). Historically, philosophy has played the role of originator of all "episteme": [2] each branch of science emerged out of philosophical analysis of its subject-matter and of its methods of inquiry. The formal separation of science from philosophy was the starting point for the ongoing process of specialisation of knowledge. Grouping phenomena into smaller and smaller classes resulted in multiplication of disciplines, each increasing in depth and decreasing in breadth (CHERRY, 1957).

Science divided itself into chemistry and physics. Chemistry of living organisms was recognised as biology, from which psychology was quickly detached and formed a distinct field of study. By the beginning of this century the social sciences had emerged out of

psychology. The proliferation of disciplines has persisted until today and it seems likely that new branches of knowledge will continue to emerge over time. The common origin of disciplines has had important implications for the organisation and methodology of acquisition of knowledge in the various fields of intellectual endeavour. As it is thought relevant to consider some of these implications, introduction of a certain historical perspective is in order here.

The evolution of science has no strict chronology nor can it be accounted for within technological or social deterministic frameworks; or within other frameworks that are endogenous to science. Periodically, new or existing ideas assume predominance and, having their origin in science, technology or society, attract a range of concepts in all three domains and provide the unifying intellectual character which identifies a specific period. Metaphors (3) often supply clues to these unifying themes which have been called "paradigms" (KUHN, 1962/1970). The clock (4) and the living organism are familiar metaphors in the context of science. The evolution of science and the expansion of its scope — both in terms of variety of subjects and in terms of methods of approach to their study — appears as a succession of such metaphors. This has helped the gradual assimilation of problem-issues originating in philosophy and the humanities, into legitimate science; and it is evidenced in the importance which matters of organisation, social structure, and form have assumed within the range of subjects dealt with by twentieth century science.

Four stages may be distinguished in the development of science, (5)

depending on the position occupied by man in the paradigms that dominate these evolutionary phases. The first, early stage represents the "science of external nature" culminating in Newton. Man was at the centre of that scheme but did not participate in it; he was the subject but not the object of knowledge. Science dealt with the study of the laws of nature that were external to man. The second identifiable stage suggests a significant shift of emphasis from a science of nature as external to man towards a science which included man as a subject of interest and study. This stage relates to the "sciences of man" and roughly corresponds to the development in classical philosophy of the opposing theories of knowledge commonly known as Rationalism and Empiricism,(6) in the late seventeenth and eighteenth century.

Rationalists assert primacy of man's intellect and reasoning faculties over the world of experience and sense perception of nature; empiricists argue from the view that the world of nature and its experience by man are the foundations of human knowledge. Both theories attempt to investigate man's physiological and psychological constitution by providing their own answers to questions regarding the origin of human knowledge, the nature of reality, and many basic metaphysical problems concerning general and fundamental characteristics of the cosmos, both physical and spiritual.(7) However, man still remains epistemologically and scientifically separated from nature, much like in the first stage. Thus it can be easily seen that neither the view that mind (reason) alone can provide substantial knowledge of the physical world (rationalist thesis) nor the view that the physical world, as it is experienced by man's sensory apparatus, is to provide the foundations of human knowledge (empiricist thesis) attribute any great importance to the interplay between man

(or living organism) and the world of nature (or the environment).(8)

In the nineteenth century, the view that there is an interplay between organism and its environment, between man and the physical setting in which he lives and organises his social life, receives definitive formulations and becomes predominant in scientific thinking. It may be taken to represent the third stage in the development of scientific thought: the so-called "man-environment" paradigm. This world outlook succeeds the teleological view of nature and man's place in it which took man to be a part of nature -- for his life cycle conforms to the laws of nature -- but also clearly distinct from narure -- because of the manner in which he was created (by "design", through the hand of the Creator). The teleological view of the world was exposed to the strong criticism of Spinoza ("Ethics", Pt. I, Appendix), Hume ("Dialogues concerning natural religion", 1779), and Kant ("Critique of Judgment", 1790). Its assumption of unity and harmony in the natural world, where man and nature do not work at cross purposes, was to be proved wrong in the last one hundred years and was replaced by the idea of the fragility of nature in relation to the power of the human element in it (nature as an ecosystem). The antecedents of the "man-environment" world view may be found in philosophy, physics, biology and the sciences which study the physical environment (such as geography). Since the "man-environment" paradigm is still dominant to date in the disciplines whose subject matter is the environment -- including man's role in it -- it is worth exploring more fully its origins.

(1) In philosophy the work of Immanuel Kant (1724-1804) reflects concern with the formulation of a dualistic theory of knowledge

in which both reason (or mind, the life element) and experience of the physical world (or matter) would be essential foundations of human knowledge. Kant regards both Rationalism and Empiricism as partial (monistic) and biased accounts of the structure and content of human knowledge. In his mature philosophy -- best known as "Critical Philosophy", beginning with his "Critique of pure reason" (1781) -- Kant attempts to develop a synthesis of the rationalist and empiricist theories of knowledge which goes beyond a mere combination of their principal tenets. For Kant, knowledge of what exists and what occurs must have two foundations: (i) it must be founded on the formal and therefore uncontradictable truths of pure reason which would provide the principles for organising sense-impressions; and (ii) it must be based on the impressions of the senses as the concrete material to be organised and interpreted by the truths of reason.

For instance, if pure geometry is assumed to be an exemplar of a formal science based on pure reason, whose truths can be established without contradiction by reasoning alone, it could not reveal much that would be of interest to a science of physical (terrestrial) space, say geography. It could not establish the position or even the existence of a hill or island for pure reason reveals no matter of fact. On the other side, a strictly empirical science of geography could not advance much without the reasoning afforded by geometry. On this account, knowledge of the world is an exercise of both man's senses which supply the <u>content</u> of such knowledge and his reasoning faculties which provide the <u>form</u> in which it is known. The <u>form</u> represents the 'a priori' (necessarily and uncontradictably true) conditions supplied by the mind; it determines the kinds of answers that can be given, but not the specific content which only experience can determine. Although the possibility of mistakes always exists

(mistake-proof knowledge being a utopian ideal), there is also always the possibility of detecting, correcting and preventing errors both perceptual and judgmental.

Kant's theory appears to bring together man and the physical world which surrounds him. In this view, man can only make sense of the world by imposing some structure originating from the mind upon it. The structure is reflected in certain 'a priori' conditions which man imposes upon his experiences of the world. These conditions are, in Kant's terminology, the forms of intuition, the organising principles, and the categories.(9) They can only be applied to material originating in experience. The use of experiential material presupposes them and thus they cannot themselves be derived from experience but "belong to the understanding a priori". However, these 'a priori' conditions, which may be the subject of scientific inquiry, are exclusively conditions that apply to the "phenomenal" world or world of "appearances" -- i.e. what is given to man in experience. They cannot be shown to apply to the "things-in-themselves", that is, to the real objects that may exist behind the world of appearances -- i.e. the so-called "noumenal" or non-empirical world.

(2) The philosophers' concern with the problem of environment versus organism also permeated much of the thinking in the natural sciences and the sciences studying man. Obviously, the question of the relation between man in society and the physical or geographical environment in which he lives is an old one — it dates back to Hippocrates in the fifth century B.C. Certain Pre-Socratic philosophers (10) contended that the world order, including man's social organisation, emerged by virtue of the generative power of nature--"physis" or "φύσις"—

without design ("τέλος" or purpose). Theirs was the view that nature was alive like an organism which can initiate changes to which it is itself subject; and this led directly to an evolutionary conception of living things. The subsequent appreciation and dominance of the philosophies of Plato and Aristotle arrested the development of such early evolutionary thinking. The influence of Platonism and Aristotelianism in human thought proved pervasive, lasting over two thousand years. The world view of an unchanging, fixed, strictly determined universe, strongly supported by the Christian Church, prevailed until its collapse which was precipitated by the Copernican revolution.(11) The latter was followed both by the rise of new speculative theories of cosmogony (12) and by the decisive scientific advances reflected in Newton's "Principia Mathematica" (1687).

This post-Renaissance period saw the re-emergence of forms of evolutionism in scientific thought and the coming into prominence of the problem of the interplay between organism and environment. Two developments seem important in this context. On the one side, the new cosmogony included theories postulating that the universe (and nature) had a history and was evolved from an originally chaotic state through a sequence of orderly changes, governed by the laws of physics (the mechanistic laws of cause and effect), to its existing complex structure. Although Newton had simply given an account of the existing structure of the cosmos, without venturing into hypotheses concerning its origin and development over time, the Newtonian principles were extended to the new cosmogonic theories of orderly development from chaos. Indeed, it may be argued that one of the sources which inspired the creation of the concept of "environment" is Newton's principles which introduce the hitherto inconceivable notion of

action of one body upon another at a distance without the intervention of anything else. The term "ether" was employed to refer to the universal medium or "milieu" through which physical forces could be transmitted and act upon something whether organic or material. On the other side, the rise of geology and paleontology and the accumulation of new information by these disciplines established conclusions that supported evolutionist views of the world. The discovery of fossils and the recognition that they were remains of organisms that lived in the past; the conclusion that the age of the earth is much greater than was originally estimated; the recognition that the characteristics of the earth's surface change gradually as a result of the influences of constant physical forces; all these findings were taken as supporting evidence for theories of evolution.

Now, the concept of evolution is common to many realms of thought in natural science, the sciences of man, and philosophy. Different theories of evolution result according to the subject matter to which the concept is applied and depending on the principles accepted in these theories.(13) However, all such theories share the general claim that the universe and/or all of its parts have undergone irreversible and cumulative changes such that the number, variety, and complexity of the parts have increased. These ideas reached maturity in eighteenth century biological science (14) which had already begun to be attracted by an organismic view of the world -- that of nature as a self-organising system functioning in accordance with inner dynamic forces -- in preference to the earlier, mechanistic view of nature as a mechanical system governed by external cause-effect laws. The linking of the metaphysical doctrine of "progressionism" (15)

i.e. the historical evolution of beings towards increasing perfection -- with transformist evolutionism [16] -- i.e. evolution over time of living things involving their transformation from simple to more complex forms -- created the background from which Darwinian evolutionism was born. Unlike earlier versions of evolutionism, Darwin's (1809-1882) theory ("On the origin of the species", 1859) offers a well-organised and coherent body of evidence to show that evolution has occurred and a plausible explanation of how it has occurred. His theory stresses the survival value of adaptation of organisms to the environment or nature which acquires a new, dynamic force. Changes in the environment, which on one account result from evolution of the earth over time, necessitate corresponding readjustments in the organisms living in it. Thus, a conception of a delicately adjusted balance between organisms and their surroundings is advanced which has fundamentally influenced the thinking of the biological and even social sciences ; [17] an influence which is still present to date.

The organismic world-outlook of contemporary biological science contrasts with the purely chemical view of the world in its claims of interaction between organism and environment. Especially where man is concerned, the man-environment relationship is taken to involve both action by man on his environment and influence of the environment upon man. The former results from the development of man's everyday activities which impose on the environment characteristics reflecting his biological and social nature. The latter is taken to emerge by way of influences of environmental stimuli upon man's perceptual apparatus. Man's sensory experiences of the external environment are seen as being shaped or conditioned by it. [18] The hypothesis

that the survival of organisms in a changing environment can only be achieved through the operation of mechanisms which enable them to maintain internal stability by resisting external environmental impacts led to the recognition that there is a so-called "internal environment" in the organism and that it must remain essentially stable even if the external environment fluctuates. In the case of the human organism, the view was developed that maintenance of stable conditions in the body is controlled by the nervous system.

W.B. Cannon introduced the term "homoestasis" to refer to the phenomenon of the maintenance of internal equilibrium in the organism ("The wisdom of the body", 1932). On this view, homeostatic mechanisms control the responses of the organism to biological and mental environmental changes and help it to function adequately -- in the sense of "adjusting to" -- under changing conditions. Thus, maintenance of identity in spite of external pressures, and adequate adaptive response to such pressures are established as the two principal demands for survival of both individual biological systems and whole populations of such systems. The concepts of homeostasis and adaptation are taken to be valid for all levels of biological organisation, from the lowest level of a single-cell organism to the highest level of large social aggregates. The theory of physiological responses has been linked with cybernetics in the work of Norbert Wiener ("I am a mathematician", 1956). Thus, the theory of evolution and the cybernetic theory of physiological responses provide a dynamic approach to some of the problems posed by the interplay between man and environment.

Concern with the problems of the relationships between man and environment has been particularly lasting in geographically oriented

sciences (e.g. human geography) and the new disciplines studying the planning and control of change in the environment (e.g. regional science). The sounds of the debate between different accounts of environmentalist and possibilist doctrines can still be heard today.(19) Extreme environmentalism leads to views of necessitarianism and predestinarianism in the world -- accounts of the world as a machine which operates according to the invariable laws of nature. Compatible with such accounts are static conceptions of the environment as a once-and-for-all given thing in itself. In contrast, extreme possibilism leads to an emphasis on the particular, the empirical study, the distrust of generalisation and theory, and the conception of environmental sciences as entirely idiographic rather than nomothetic disciplines. The dichotomy between environmentalism and possibilism seems to be rendered redundant if it is decided to accept the metaphysical view that there exists no distinction between man and nature (as in physicalism : cf.Appendix to Part II,entry:"The Mind/ Body problem").

The last three decades have witnessed the emergence of approaches attempting to provide a synthesis of these two contrasting outlooks. That the exploration of such syntheses is fruitful is indicated by practical studies of environmental problems and problems of control and planning of change in the environment. These kinds of problems require attention to "influence factors" directly attributable to man's environment. Although the new quantitative approaches to the study of man-environment systems have strong deterministic -- even mechanistic -- overtones (e.g. the so-called "social physics" approaches adopted in spatial interaction models used in urban planning) they are also strongly probabilistic and move towards generalising rather than individualising methods. The development of mathematical

descriptions (generally known as mathematical models) of social and physical arrangements in geographical space, including urban built-up areas, is one result of the notable influence that such thinking has had on the disciplines which study the environment.

The"man-environment" paradigm -- being the third stage so far identified in the development of science -- can still be seen to provide the context within which much of the activity of the sciences of man and society is taking place. However, certain writers have distinguished a fourth stage.(20) This appears to be dominated by the recognition that the entities relating to man, which form the subject and object of science -- such as, computers, languages, epistemology, society, cities -- are already made by man. They are artifacts that man does not understand sufficiently well; he resorts to science and its "methodology" in the hope and belief that he will be able to proceed with the study of such artifacts in a more systematic way. The characterisation of a science that deals with such artifacts as "the science of the artificial" (SIMON, 1969) has been appropriately employed to refer to this fourth paradigm of science especially in the twentieth century. Artifacts can be seen as linkages of man with nature. The concentration of contemporary science on the study of these artificial entities seems to be the principal catalyst in the approach of science to society and the adoption of a perspective which tends to unify these two domains.

2. The man-environment relationship and fundamental forms of social thought.

The views taken of the relationship between man (or, more generally organism) and environment have given rise to certain fundamental forms of social thought. It is possible to identify three main groupings of views (STARK, 1962: Ch.1):[21]

(1) The physical environment is taken to be dominant over the human individual and includes it in the sense that the nature of human individuals is not seen as anything distinct from the environment. In this account, the emphasis is on matter rather than on the animate element (life, individual). Knowledge of the laws governing the phenomena of nature would also provide the key to knowledge of regularities which govern all that there is, including man and social life. This position gives rise to various monistic doctrines of materialism, such as naturalism,[22] physicalism, epiphenomenalism (which takes life and thought as mere epiphenomena of material reality).[23] The question whether mental states or events have an independent existence of their own in some realm of the mind apart from nature, or they pertain instead to the same realm as nature -- being, say, actually events in the brain or the nervous system -- is an aspect of one of the perennial problems of philosophy. It has come to be known as "the mind/body problem"; and the view taken of the relation between the mind and the material world has important implications for a number of relevant methodological and epistemological issues in many cognitive domains -- issues such as the relation between values and facts, ends and means, the "knower" and the "known", method of inquiry and subject matter, etc.

The linking science in the conception of a dominant nature is said to be rational mechanics and, to a lesser extent, astronomy -- while physics is regarded as the paradigm of all sciences. On this account, everything in the world is taken to rest on and result from the interplay of mechanical,mathematically expressible, and calculable forces. The guiding metaphor is mechanism and this gives rise to a "pan-mechanistic" ontology.

The social thought that is informed by this view takes society (the social system) to be nothing more than an aggregate of individuals, a multiplicity. Their properties, suitably aggregated,would be the properties of the society that they form. This atomistic view of society connects up with methodological individualism (24) and nominalism,(25) the latter regarding only individuals as real and society as a name, a convenient shorthand expression to refer to an aggregation of human beings. In this line of reasoning, the social world is traditionally seen as an equilibrium system. If only the individual is real, then the coherence of society -- i.e. of individuals in society -- must depend on the balancing of individual forces. The underlying rationale of nominalism imposes a mechanistic approach to society. Thus, institutions, organisations, government are objective results of subjective energies. Human individuals manage to co-exist much like celestial bodies avoid mutual destruction because their attractions and repulsions ultimately fall into an abiding pattern. A classic account of mechanism in social theorising is (CAREY, 1858/1859) where the well-known "social physics" approach is developed. This approach has informed the modern formulations of the gravity model and a family of models of spatial interaction which are the most widely used models in urban planning today (BATTY, 1976); (WILSON, 1974); (OLSSON, 1965). These connections are explored below.

The basic problem with this view is, of course, its inability to account for aspects of individual free will and creative performance. Though its methodological approach is said to be "individualist", the model of man that it accepts is only "spuriously individual"; it is an "objective" individual with physical characteristics, a body. It lacks a self to focus upon (HOLLIS, 1977: p.12) in order to apply its causal models and explanations. As a consequence, explanations couched in mechanistic terms tend to appear incomplete and partial. The empiricist theory of knowledge,[26] according to which it is not possible to acquire knowledge about the world except through experience (sense perception) and observation received by the mind through the senses from the environment is an epistemology that is compatible with this view of the man-environment relationship. The environment — nature and society -- is the protagonist and "stages the show" while man is a "spectator": he theorises (in Ancient Greek, "θεωρεῖν" literally means "being a spectator") about the environment on the basis of what he manages to perceive through his sensory apparatus. Thus comes into being one of the most pervasive and still faithfully followed epistemologies: empiricism, or the "spectator theory of knowledge" (John Dewey), or the "bucket theory of mind" (Karl Popper). The latter expression illustrates the claim of "orthodox" empiricism that the mind is a blank sheet onto which observational data are inscribed solely through the senses excluding say, intuitionist and introspectionist "modes of knowing", such as phenomenological or hermeneutic[27] approaches involving "understanding".

(2) In another set of views, the emphasis is placed on the animate rather than the inanimate element in the world; on the organism

rather than the environment. The universe is seen as permeated by life, mind, "soul-substance". The scientific ideal of this position is the science of biology and, to a lesser extent, physiology; all other sciences must model themselves on it. The cosmos is taken to be an entity that is constituted in the same manner as the smallest living creature in it. The guiding metaphor here is the organism which is said to differ from a mechanism (or mere aggregate of individual parts) due to its characteristic parts/whole relations, viz. the position of the parts in relation to the whole organism governs their nature and existence, much like legs, arms, etc. are what they are as long as they are joined to a living body.

The tradition of social thought informed by organicism takes society as a unity, a whole rather than a multiplicity. Societies as wholes are seen as organisms whose component parts are interdependent: a change in one will introduce corresponding changes in the others. Moreover, they are said to possess holistic properties, i.e. peculiar to the whole, over and above the properties of their constituent parts or their aggregates. A society as a whole could be said to possess cultural, institutional, linguistic traits that cannot be derived by aggregating individuals' characteristics. This holistic view of society is associated with methodological holism [28] and philosophical realism [29] -- though not invariably. Organicism in social theorising has emerged in a variety of forms, of which two are said to be primary. The positive or positivistic variety of social organicism (e.g. the views of Herbert Spencer) appears as a peculiar mixture of methodological holism and positivist epistemology.[30]

It regards society as an evolving organism and seeks to study social phenomena in terms of totalities, aiming at discovering the natural laws

which govern its evolutionary change. The organic analogy suggests self-generated growth and is inimical to any form of externally imposed , planned intervention in the process of societal development.(31) In this sense, it differs from the other guiding metaphor, i.e. mechanism. The latter takes social problems as dysfunctions or breakdowns in the operation of a mechanism. These could be "repaired" by intelligent (social) engineering. Alternatively, the machine could be made to operate more efficiently, parts of it could be renovated, etc., and hence planned change and artificial construction is easily accommodated subject to technical knowledge of the operation of the machine.

There is also a <u>normative</u> form of social organicism which takes society as a <u>potential organism,</u> in the sense that it is ideally and not necessarily and actually an organism. Rather, society is seen as organismic in "design", along organic lines. In <u>normative organicism,</u> a "design" need not be realised: the emerging structure need not be identical to its "design".(32) Society is regarded as fundamentally an "organic system" : it <u>ought</u> to become so in the full sense of the term (on the Aristotelian version of the view). Holistic conceptions of society as an organism have generated other forms of organicism which generally recognise society as a whole (as a unity) but sidestep, to a greater or lesser extent, the ontological issue of whether society is <u>really</u> an organism or it appears <u>as if</u> it were one.(33) This is for instance,the approach taken by Talcott Parsons.(34) The latter's "social systems" view of society (35) is drawn from the concept of a "system" which embodies the "essense" of an organism. The relations among parts internal to the system/organism and the way in which they relate to the whole (what function they perform) are best understood

by studying interdependencies among parts and between parts (or their aggregates) and whole and their contribution in generating change. This approach opposes mechanistic causal analyses of social phenomena and favours teleological accounts in terms of goals. Furthermore, holism cum organicism, combined with recent trends towards interdisciplinary research and the cybernetic study of systems have provided the foundations for General System Theory (SUTHERLAND, 1973: pp.6-7); (LASZLO, 1972); (KLIR, 1972); (CHURCHMAN, 1968).(36)

However, these versions of positivistic organicism are founded on a materialist metaphysics and hence cannot be said to lie in the same intellectual tradition as the forms of organicism which presuppose idealism and the primacy of mind, intellect, intuition over the material environment as a foundation for epistemology. The metaphor of the organism has also informed views of what constitutes a self, a person, a human being. The commonly used expressions: "I am my own master"; "he is a slave to his passions"; "man is slave to nature"; illustrate a distinction that is often drawn between a "dominant self" -- oriented towards the higher ideals of life and a "lower" self that is not so oriented. The former has received various interpretations: "reason", "higher nature", "selector and pursuer of long-term goals", "autonomous self", etc. The latter "self" is not concerned with such "higher values"; it is often identified as "the lower nature of an individual", "irrational impulse", "uncontrolled desires", "pursuer of immediate pleasures", and the like. This is seen as a "self" that needs to be constrained and disciplined in order to reach the "higher ideals" of its "real" nature.

Now, the organic metaphor is employed to suggest that the "dominant" or "real" or "true" self is something broader than the "imperfect", or "irrational" individual. In this sense, some form of "whole" is postulated to come prior to its individual elements and, being the "true self", to freely impose its collective or organic single will upon its imperfect members so as to achieve their emancipation from constraints imposed by their own "inferior nature" and secure their movement towards the realm of "higher freedom".(37) The use of the language of organic metaphors to justify the coercive actions of some individuals upon others, or less extremely to advocate normative reconstruction of some society as a whole, or even comprehensively re-plan a whole city so as to make it conform to some ideal conception of the "good urban life", has been extensively criticised for its dangers. However, the issue appears to be more complicated. For it is conceded that coercion of others in their interest is often justified in view of some collective goal, such as environmental pollution, social justice, preservation of natural resources, war effort. Such goals are not ordinarily pursued by individuals of their own volition allegedly due to their corruption, ignorance, blindness, indifference, selfishness: individuals are not always the best judges of their own interests (RESCHER, 1972).

But it might also be claimed -- as it has been -- that there is a "true" or underlying purpose inside the individual human beings which is their "real self" and not their apparent, empirical self in space and time which may not know anything of that "real self". Even though the individuals <u>appear</u> to resist that "true" or underlying purpose, it is the latter that needs to be taken into account in deciding about planned societal arrangements. This kind of reasoning, dear to proponents of normative planning and to Marxist approaches

to radical social reconstruction, involves commitment to a set of values, goals, and objectives which are to be attained by some normative conception or plan. It may lead to strict coercion of individuals by justifying the sidestepping of their apparent wishes in the name of their "real" or "underlying" wishes. But this involves the paradox of (BERLIN, 1967/1977: p.151): "equating what X would choose if he were something he is not, or at least not yet, with what X actually seeks and chooses" and this is "at the heart of all political theories of self-realisation. It is one thing to say that I may be coerced for my own good which I am too blind to see: this may, on occasion, be for my benefit; indeed it may enlarge the scope of my liberty; it is another to say that if it is my good, then I am not being coerced, for I have willed it, whether I know this or not, and am free -- or "truly" free -- even while my poor earthly body and foolish mind bitterly reject it, and struggle against those who seek however benevolently to impose it, with the greatest desperation". In this sense, the view taken of what constitutes a "self" suggests a corresponding conception of freedom, including freedom from coercion that may be imposed by planning.

Some views which take the subject, that is, the human individual, as first and foremost are also referred to as "humanistic".(38) They tend to advocate so-called "subjectivist" approaches to the study of social life. Such "subjectivist" approaches are characterised by strong individualist emphases though they may not be said to be individualist in the atomistic sense of mechanicism. They seem to face a number of difficulties when they attempt to reconcile the existential individual with the structural elements that may be identified in a society, such as relations of power, authority, domination, material production, social stratification. When they are advanced as theories of society, those views that are

informed by idealism tend to neglect aspects of the material world that could be shown to be important in structuring social life (GIDDENS, 1976).

(3) Finally, the last group of views is seeking to synthesise the other theses and postulates interaction between the human individual and the environment, the "knower" and the "known", subject and object -- though these views,too, are highly diverse in philosophical orientation and substantive contributions. In one account associated with Wilhelm Dilthey (STARK, 1962: Ch.1), monistic intepretations of reality are rejected (i.e. that reality is all matter or is all mind or life element) and a form of dualism is postulated. It is accepted that the nature of reality is dichotomous: there is a realm of matter which forms the substructure of the universe; against it stands a principle of life, spirit, and will, which is caught in conflict with matter, and strives to give it form and meaning. The linking discipline in this tradition is history. If the essense of reality is the contest between the "higher" form-giving forces of existence and life and the "lower" form-resisting masses of matter (as Plato has argued) then historiography will reveal the most significant aspect of being as the record of man's fight against fate: the fight of a value-conscious species against a morally indifferent universe. For Kant and Fichte, what is important is not "phenomenal" man -- as a material entity or as an animal -- but rather "noumenal" man who rises above the state of a creature and asserts his moral purpose and character, and his essential freedom.(39)

The kind of social thought that emerges from this tradition is a mediating view which takes society both as a unity with real

integration of social order and a multiplicity with real independence of individual members constituting the community. The emphasis here is on process, that is the dynamic progression of society from multiplicity to unity. Society appears as a struggle from conflict to order, from chaos to cosmos, as a cultural formation and not as a creation of natural laws, either mechanical or organismic, either of irreducible multiplicity or of pre-established unity. This is said to be the cultural tradition (STARK, 1962: Ch.1). In this sense, "individuals" and "society" are not regarded as separate or even separable realities for existence of the one implies existence of the other. The stress on process or interaction between the human individual and the environment, between mind and matter, is also adopted in A.N.Whitehead's writings on metaphysical issues.(40)

Envisaging"organic connections between things in terms of something like feeling" Whitehead takes the reality of the universe to be the fundamental activity of process: "simply the becoming or growth of a new way of feeling the rest of the world" (JOAD, 1936/1957: p.575). He sees the world of science as totally stripped from human values and hence impoverished: "the science of nature stands opposed to the presuppositions of humanism" which are as universal and as deserving of respect as those of science (ibid.: pp.567-568). He rejects the "bifurcation of nature" (WHITEHEAD, 1926: pp.26 ff.) which is imposed by natural science in its insistence to distinguish between "substance and qualities, cause and effect, thing and environment, ... mind and body, life and matter, spirit and nature" (JOAD, 1936/1957: p.571). Thesethings taken by themselves are only abstractions from their context. "The cosmos is a unity; it is a patterned process" in which things are interdependent (ibid.: p.573): "the relations of things

to other things, to their environment, .. to their past, to their future, and to the minds that know them, literally, constitute part of the being or essense of the thing". Thus, neither man nor nature can be understood in isolation: they must first be fused "together as essential factors in the composition of 'really real' things whose interconnections and individual characters constitute the universe" (ibid. : p.582).

Another tradition which advances reconciling views transcending dualisms between man and environment, mind and matter, knowledge and action, values and facts, theory and practice, is the philosophical movement of pragmatism.(41) Apart from its purely philosophical contributions(42) this tradition of thought has been influential in analyses of social issues. This influence can be felt in current intellectual activity in the social sciences, but also in urban planning, if it is properly examined in its own right and not taken for granted as is usually the case. The view taken of knowledge in this tradition opposes the classical empiricist epistemology which separates the "knower" from the "known" . It maintains that thought and knowledge are biologically and socially evolved modes of adaptation to and control over experience and reality. The process of knowing is essentially motivated, and knowledge is justified, by conditions of efficacy and utility in serving human aims and needs. It is not a contemplative activity detached from human interests and aimed at procuring increasingly perfect copies of a world unaffected by human values.

Because human needs, purposes and interests are diverse, there are many ways in which experience may be apprehended, systematised, and anticipated. In this sense, pluralism and tolerance to different points

of view and ways of looking at the world is advocated. Knowledge of the world is essentially subject to the critical objective of maximum usefulness in serving human goals, needs, and interests. However, decisions on what is most useful or needed are relative to some given point of view and purposes (THAYER, 1968: p.43). The meaning and justification of human beliefs about the environment are thus interpreted in terms of their practical effects or their substantive content. Moreover, knowledge is seen as an instrument for action and hence integrally connected with the latter. The rational beliefs that are entertained by human individuals are the outcome of deliberate experimental interaction with the environment (QUINTON, 1977: p.4). John Dewey elaborates a theory of intelligence and knowing by conceiving of thinking as an active interchange between organism and environment (SCHEFFLER,1974: p.2) which is seen as a learning process . The traditional empiricist distinction between beliefs and knowledge is transcended in pragmatism. Instead, it is accepted that statements about the objective world may depend for their "truth" on whether they are believed and so become "true" by agreement or convention (HOLLIS and NELL, 1975: p.4).

Knowledge emerges as a social activity, a process of learning from the environment directed towards practical human purposes and needs: an essentially evaluative activity "apprehending the future as qualified by values which action may realise" (LEWIS, 1946: p.4). The pragmatists' interpretation of thought as intimately intermeshed with action in a goal-directed context suggests the continuity of mind and nature : the mind acquires knowledge by way of physical interactions within its environment; it shapes and is shaped by it. The conceptions of the environment that enter into such knowledge

always reflect the active and purposive life of the knowing organism. There is an interaction between the knower and the known. This conception of knowing indicates the presence of strong humanistic elements in pragmatism. This is further ascertained by the attempt to transcend the classical dualisms between the human life and the natural environment in which it arises; betweeen the knowledge that man acquires, i.e. his facts, with the values that he espouses; between the concepts and symbolic abstractions in terms of which human knowledge is couched and the realms of willing, feeling, and acting for the latter are as much parts of his life as an organism as his cognitive activities. In this undertaking to overcome the "bifurcation of the universe" the pragmatists are in agreement with Whitehead, in the sense that the distinction between the abstract and the concrete, between the things "as they are" and the things "as they are perceived", is bypassed through: (i) the introduction of a new way of conceiving of abstractions as relative, and (ii) acceptance of the functional or instrumental nature of thought (SCHEFFLER, 1974: pp.6-7).

The concern of pragmatist social thinkers with the problems society is facing in its continuous transformation in history was a natural extension of their epistemological position regarding the close interrelation of knowledge and action, and the attempt to re-integrate the hitherto separate elements of "technical skills" and "ideal goals" (THAYER, 1968: p.457) in a conception of knowledge guiding action. They take intelligent life to aim at maintaining itself through continuously changing environments by evolving techniques of adaptation and control : the effective modification and direction of existing conditions by way of intelligent, planned action. They advocate

inquiry into future consequences of action and direct thought to future possibilities. In his "instrumentalism"[43] John Dewey puts forward a philosophic/scientific method for solving social and political problems through knowledge-directed planned action: a first approach to a "planning science". In this undertaking Dewey stresses historical, organic, and cultural aspects of society. He ascribes to history the important role of ally of all social disciplines for it studies how things came to be as they are. Furthermore, he advocates a form of "cultural organicism" and "evolutionary naturalism" which asserts that social life should be investigated in context. Social inquiry should come to grips with life, experience, process, growth, context, function; it should seek to understand the present as a means of controlling the future. The problem of the individual versus the community is seen to necessitate construal of social policies and plans under conditions enabling increased control to be vested in those who are affected by planned action and development programmes.

Continuous and critical reflection and understanding as well as continuous and fresh reflection on beliefs, ideals, and social goals appropriate in the solution of pervasive social problems represents the two-fold effort involved in the pragmatist ideal of social reconstruction (THAYER, 1968: p.445). This ideal presupposes that organically related, unified, harmonious social conditions are more desirable than situations of conflict in society. Thus the ideal of order becomes a norm and directs social theorising and planning. Such an ideal conception may be accepted or rejected on its own merits: pragmatism or "instrumentalism" do not assert its "truth" but implicitly presuppose it. Though many of the views expressed

in the "instrumentalist" theory of inquiry appear to be possible and applicable in planning and social policy making, pragmatists have never been specific enough as to a programme of social reconstruction which goes into more particular areas of the key pragmatist notions of "reflective intelligence" and "organic growth in society". The pragmatists'aversion to making societal goals for planned action fixed and absolute, and their determination to keep them relative to changing circumstances, and their mistrust of fixed and inflexible social action programmes and policies renders planning of societal arrangements weak and ineffective: a pragmatist theory of planning and social reconstruction faces the paradox of the lack of pragmatic results.

The key concepts of pragmatism may be found incorporated into the recent movement in urban planning theory referred to as the "new humanism" which has been informed by the works of (DUNN, 1971) and (FRIEDMANN, 1973); while (REIN, 1976) advances a formulation based on such views for the policy sciences. The "general theory of planning" developed in (OZBEKHAN, 1969) also draws heavily on pragmatism and interprets its holistic, evolutionist perspective in terms of the methodological instrumentality of systems analysis. In most of these works, pragmatists are seldom referenced. In the context of the "new-humanism", planning is viewed as a process of social learning, leaning on history for accounts of how things came to be as they are and seeking to understand social life in its social milieu of culture and instutitions, rather than simply within strict disciplinary boundaries. This introduces a holisitc perspective in analysis of social phenomena. In the views of Dunn and Friedmann, social evolution is a process of social learning, and planning is one stage of that process. Planning is said to involve the application of knowledge of social life to guide social action

and development, the two being interdependent and integrated: theory and practice, substantive and procedural concerns of planning are seen as interrelated.

The "new humanism" clearly reflects the pragmatists' views on the nature of learning and society as evolutionary processes and on the pluralistic character of knowledge (theory) as well as of society and its political arrangements (social practice). As a consequence, it takes a view of decentralised power and decison-making functions and seeks to invest in those whose lives are affected by policies and planning the power to play a meaningful part in the shaping of their future. The idea of active participation of the public in the planning of societal affairs, which is currently fashionable, suggests connections with the pragmatists' notion of "social experimentation" by way of a dialectical relationship between knowledge and action, theory and practice, and is taken to be a fundamental element in the planning of change in society. The kind of uni-directional decision-making associated with urban planning conceived on the model of a policy science or social technology is strongly criticised for its inability to reconcile in any convincing manner questions of means with questions of social goals and objective issues. Planning conceived of as a process of social learning places heavy emphasis on communication between the "planners" and the "planned" which would promote mutual learning and adjustment and readjustment of views, goals, and plans. The title of a recent book by Donald Michael, "Learning to plan and planning to learn"(MICHAEL, 1973) captures rather well this conception of planning as a dialectical process of experimental learning.

But this view of planning also incorporates another ingredient of pragmatism, that of "critical reflection". Criticism of the ideology that is implicitly presupposed by social thought, as well as reflexive critique or self-criticism, is taken as an essential component of the "new humanism" in planning. Thus, planning is viewed as a process of inquiry based on learning and dialogue and evaluative of the future; as a way of investigating problems and clarifying and establishing communication rather than as a fixed system of methods and procedures aimed at ultimate and final answers and great truths. This account is closely related to Dewey's view of knowing as an evaluative activity. Taking thought and human conduct (action) as expressions of social contexts and historically evolved institutions, Dewey argues that education (learning) and critical revision of social institutions are ways of controlling and directing social conditions. Intelligent, planned action predicated upon goals assigning value to something in the future, and upon the entertaining of predictions that specific efforts would bring about satisfactory outcomes, is seen as an evaluation of the future. In this sense, thought and ideas as knowledge are referred to future potentialities as action. The nature of knowledge in planning is therefore predictive in the sense that it takes as one criterion of meaning the consequences for future experience that some planned action would have. Knowledge is seen as the modification of the world.

The conception of planning which takes the generation and evaluation of alternatives as a "learning process" of exploration and testing (CORDEY-HAYES, 1970: p.362) seems to have only terminological affinities with the thesis of the "new humanists". The fundamental difference between them lies in the scope that is allowed for learning. In this

latter view, the "learning process" postulates a recycling of the results from a sequence of planning operations: (i) statement of general goals; (ii) formulation of tentative objectives; (iii) derivation of standards and design criteria reflecting objectives; (iv) generation and elaboration of alternatives; (v) evaluation (ibid. : pp.362-363). Repetitions of the cycle would, presumably, result in increasingly detailed and refined proposals. Hence learning is explicitly confined within the framework of technical considerations and does not transcend its boundaries to reach out to the "planned". There is no "mutual learning" in this conception of the learning process of planning: the learning concerns the "knower" not the "known", the "planner" not the "planned". Hence this account of the planning process could be said to be akin to a "technological" model of planning as opposed to a "humanistic" approach.

3. Implications for approaches to the study and planning of the environment.

Despite its great scope the above discussion has not covered all relevant aspects in such depth as to allow any significant conclusions to be drawn at this stage. The three traditions referred to above, viz. mechanicism, organicism, and historicism, have tended to give rise to corresponding forms of social thought in terms of ways of looking at society and the relation of man to his environment. All three kinds of social philosophy that emerge from the "root metaphors" (PEPPER, 1942) of the machine (clockwork) and the organism, and the perspective of history and culture possess their own value and validity . Thus, it might plausibly be claimed that :

(i) society often emerges as a multiplicity, an aggregation of competing and conflicting individuals, rational pursuers of their own values and interests in a self-centred and short-sighted manner, indifferent towards collective goals and purposes -- however these may be defined. In this way, it is not dissimilar, in principle, from systems of weights and counterweights in mechanical, more or less unstable equilibrium (mechanicism);

(ii) society also appears as a well-knit and cohesive unity, an organic whole, characterised by a kind of coherence which transcends individuality and focuses on the communal, the collective, the survival of the whole body social, and is thus akin to an organism in nature (organicism);

(iii) society may frequently be seen as progressing from a state of loose towards a state of firm integration; it appears as a purposeful and continuing effort over time tending to lead from a state of loose connectivity to one of organisation, from individual near-independence to almost organic unity and cooperation over collective goals (perspective of history, culture, and process).

The way in which the metaphors of the machine and the organism are taken will have a bearing on the way in which society is viewed. An important epistemological point is involved here: i.e. whether human individuals and their social life are <u>really</u> the way they are described in these outlooks or whether they are constrained (by social processes and cultural assumptions operating in historically developing societies) to conduct themselves <u>as if</u> they were so describable. In the first case, the models developed on the basis of these metaphors are taken in either of two senses:

(1) As abstractions or idealisations from only observable conditions of social life -- if terms refer to unobservables they have to be expressed in terms of observables -- whose structural properties are shared with, in the sense of corresponding to or being isomorphic with, some actual system upon which they are modelled. Such abstractions or idealisations are constructed so as to provide useful points of comparison with, and suggest fruitful hypotheses about, the real world of man and society: models as heuristic devices of strictly psychological interest in the development of theories about social life.(44)

(2) As hypothetical descriptions of structures and mechanisms underlying the domain of phenomena concerned, which are taken to correspond to what exists in reality -- subject to testing against empirical evidence.

Such sometimes unobservable,hidden, or obscured, but potentially real structures and mechanisms would be taken to constitute the "essence" (or essential properties) of some aspects of social life which causally produce and account for observable conduct and behaviour.(45) Construction of models so conceived would be necessary for the formulation of objectively true theories of social life.

Although interpretations (1) and (2), above, exhibit important differences they can be identified for the purpose of contrasting them against the second case above -- the "as if" case. For both (1) and (2) recognise some version of the correspondence theory of truth. The real world of social phenomena is said to have a structure, whether observable or underlying and unavailable to observation, which the model pictures or copies or represents or is isomorphic to. Now, in the "as if" case, it might be maintained that people conduct themselves in a way which appears as if it is describable by drawing on the vocabulary of the metaphors of the organism and mechanism. The models that would be constructed on the basis of these metaphors would be essentially regarded as fictional constructs. They would be formulated to provide simple and economical devices with the aim of predicting observable features of the phenomena of interest. The use of a model so conceived would be justified on purely pragmatic, instrumental grounds, that is, in terms of how adequately it performs functions that are taken to be relevant for the purpose at hand: e.g. as an aid to the imagination, as a predictive device, as an economical idealised representation -- one among many possible representations -- of some set of empirical data. Being fictional, "as if" constructs by definition, such models would not be regarded as either true or false, only more or less useful or appropriate instruments given the purposes of the inquiry. They would not make

any ontological claims regarding the real existence of systems, mechanisms, organisms, structures,feedback loops, and other elements in the language of the metaphors. The models would not be concerned with establishing isomorphisms or describing "underlying structures ", but would employ and organise concepts in a way which best serves the particular cognitive objectives that are pursued in inquiry.(46)

It might be argued that the modes of knowing that correspond to these conceptions of models and metaphors have identifiable links with the view taken of the relationship between man and environment. Thus, in (1) the mind attempts to match the structure that it sees in nature but it is the latter that directs the relation for only what can be observed, i.e. what is apparently in nature, can count as knowledge. In (2) the mind is regarded as capable of arriving at descriptions of real, existing structures of the environment and grasping the "essence" of its features even though it has not received sensory messages from the latter. The mind subsequently seeks empirical validation of its conceptualisations of the environment. Finally, in the last view, the mind is seen to construct instruments by drawing upon the environment but also introducing into the construction the human perspective of goals, purposes, and interests -- and this reflects an interactionist view of man and environment. The environment shapes the instruments but is also shaped by them. The connections that may be identified between the above three modes of knowing and the respective traditions of social thought might be intelligible, but they cannot be said to be necessary.

Now,it is clear that -- barring extreme cases -- the metaphors are not employed in a literal sense. Society is not taken as a <u>real</u> machine in terms of its coherence and equilibrium; it is not viewed as a real

living organism in terms of its organic integration. Rather, these metaphors are drawn upon as "ideal types" à la Max Weber :[47] as sources of useful insights in the attempt to develop hypotheses about social organisation and social life, or as aids in conceptualisation, or as instruments for prediction and control. Their relation with their referrent environment would be a relation of purposive construction with the order revealed in inquiry.[48] The traditions of social thought that are informed by the guiding metaphors of the machine and the organism are often said to suggest particular answers and attitudes towards questions of ethics, metaphysics, politics, and policy making and planning over and above their clear methodological implications for the study of social life (DRAY, 1967: p.53). This would also hold for the historical/cultural tradition.

The latter would be naturally suspicious of "mechanistic" forms of planning and policy making in response to clearly identifiable problems or "breakdowns" in the operation of the social machine. In this case of objectively determined and unanimously agreed upon goals (viz. repair of the "machine" through intelligent social engineering), planning emerges as an applied science or technology. Man applies knowledge -- originating from a value-insensitive environment and filtered through the human senses and remaining, somehow miraculously, objective and free from cultural traits, and human interests -- to solve expertly and uniquely defined problems. The atomistic world outlook of mechanism fosters disjointed, problem-oriented, ideally value-free planning of societal affairs as a social technology looking at society and its institutions "as machines rather than organisms" (POPPER, 1957/1961: p.65). The historical/cultural tradition would accept the individualism of disjointed,

mechanistic problem-solving but would not divorce it from context and would seek to grasp in addition the historical, cultural, processual dimension of some social collectivity. In this sense it would both agree but also differ from forms of policy making and planning informed by the organismic metaphor.

It would accept the latter's emphasis on becoming, wholeness and comprehensiveness but would be suspicious towards both: (i) the unique, objective and rational determination of pathological states of the "body social" associated with positive forms of organicism (through empirical social surveys and rational considerations of efficiency); and (ii) the unique and normative (ideological or intuitionist) conception of the ideal or "true" form of social organisation of the whole, to which all planning effort ought to be committed and for whose implementation into actual social life it should be striving, with means that are predetermined by the overriding collective considerations. As a reconciling or mediating approach, the historical/cultural tradition would advocate pluralism and tolerance of individual views, competing goals, and alternative accounts of "what is really the case", without being totally removed from the social context and organic integration of social life.

The historical/cultural tradition might even be inimical towards the cybernetic metaphor which was advanced in the last thirty years as capable of subsuming and synthesising the assumptions and language of the two guiding metaphors of the machine and the organism, and thus leading to more effective organisation and planning of social life. The cybernetic metaphor informs approaches to planning and social policy making oriented toward improvement of human conditions.

They attempt to achieve this by establishing criteria for the effectiveness of policies, say, through analyses and balancing of costs and benefits, utilities and disutilities, unit costs, and the like; or through controls aimed at minimising the impact of undesirable consequences of purposive social action -- as implied in the key notion of "feedback loops" for system self-correction. Social thought in the historical/cultural tradition is fearful of the demands for masses of information and data entailed by the cybernetic conception of societal planning.

This enormous appetite for data is said to justify extensive social data-gathering and storage procedures allowing the tapping of this information in planning and policy making exercises. The pessimistic and slightly romantic view taken of a centralised information policy revolves around the detrimental totalitarian effects of such a policy upon the free pursuance of human values by cooperating individuals. But there is, perhaps, a more plausible cause for concern in this respect. By establishing procedures of information gathering and fixing data categories that are relevant in "social accounts" and "social indicators" the range of concepts and possibilities that enter into the realm of creative policy making is artificially restricted. The cultural fixation of data categories is thus said to effect a premature closure on the aspects that are taken to be relevant in policy making by directing the search for planned measures towards the data categories that are already -- some say arbitrarily -- fixed. Moreover, it is not at all certain that the fixed categories of data correspond conceptually with what there is in social reality. The uncritical acceptance of such statistical material as "rock-bottom" foundations for generalisations and explanations regarding social

phenomena has been seriously criticised (HINDESS,1973); (CICOUREL, 1964).

Writers in the historical/cultural tradition view pessimistically the so-called "technicist" language and ideology of the cybernetic metaphor which relies upon the conception of self-regulating cybernetic controls (servomechanisms) and neglects the processes of self-realisation and learning through which real people participate in the arrangement of their affairs. But would this mediating position of process, history and culture be free from criticism? Probably not; perhaps the most severe criticism that may be levelled against it is its ineffectiveness in producing concrete proposals and programmes for action. Planned action involves more than pluralism of goals, organic and cultural integration, and proliferation: it involves a level of specificity and commitment which seems to be conceptually excluded from the historical/cultural tradition which argues that all options should be kept open at all times. Answers to these problems could be sought and eventually found. However, by maintaining a poly-theoretic and relativist view of knowing and acting this tradition seems to be self-negating for it cannot justify itself. If it is put forward as the "correct" approach to planning and policy-making then it logically contradicts precisely what it preaches: pluralism and proliferation of views, programmes of action, policies, goals, and ideologies. If it is not advanced as the "right" approach then there is no overwhelming reason why it should be regarded as more credible than other approaches. This may appear as a banal criticism of relativism, and so it is; but it is one which the historical/cultural tradition may find it difficult to refute.

Yet this tradition appears to be most appropriate in environmental studies; for it places emphasis on the processes of interaction between man and environment which constitute the main concern of such studies, and so reconciles the tension between the existential individual and structural aspects of the environment (natural and social). Unlike other disciplines which study man and social life aspatially, environmental planning and policy making is a field where social organisation should be studied in its interaction with spatial context. By focusing on the purely physical aspects of space the latter is objectified, reified: it becomes a "container of things" and is divorced from the meaning it might have for different individuals. By focusing solely, on the meaning aspects of space, so-called social conceptions of space, and how these inform human action the structural and enduring aspects of the environment (including structural aspects of social life) tend to be neglected.

In either of these cases, the ensuing accounts of the man/environment relationship appear impoverished in one or another sense. Although it cannot be claimed that any perspective of society will ever be complete, viz. providing a "total picture" which includes all points of view and all aspects of social reality,(49) it could be argued that placing emphasis only on the environment or only on man affords knowledge that is incomplete in the wrong way for each of these viewpoints tends to exclude the other: the limitations on the perspective are not due to the enormity and complexity of things in the world which the human mind may never grasp in its totality, but rather are artificially imposed by the particular way of looking at the world. By accepting that society appears as if it were a mechanism one excludes the possibility of society appearing as if

it were an organism or something else. In this way, it could be said that these perspectives -- and others that are developed within these traditions -- reflect some particular point of view, some way of looking at things and organising them so that they acquire meaning within their broader context and thus become intelligible (BERRY, 1974: Ch.1).

Each perspective gives rise to a frame of meaning; and it may not be possible to establish rules mediating between different frames of meaning much like the case of translating between two languages. Each perspective guides thought in a particular way and excludes other ways of conceiving of its subject matter. Each may be said to possess its own vocabulary, its own language for conceptualisation, and its own rules and procedures for acquiring and validating knowledge, its own consistency. Its corresponding frame of meaning or paradigm provides the context or whole within which methods, concepts, and social practices become meaningful and are intelligently and intelligibly connected with other methods, rules, procedures, and practices. Each frame of meaning involves implicit presuppositions and seeks to discover what these presuppositions are by acquiring knowledge which is inevitably founded on these. This renders the problem of knowledge obtained within a frame of meaning a question of <u>understanding</u> and <u>interpreting</u> the data of experience within a broader historical and cultural context of social practices, metaphysical presuppositions, systems of beliefs, and forms of life. This essentially hermeneutic problem involves the observer in an act of relating <u>parts</u> (particular substantive aspects of some subject matter) to <u>wholes</u> (frames of meaning) with full consciousness of his own historicity and relativity and its implications for the "true"

meanings of episodes of social life.

This view gives rise to the problem of comparing and assessing different perspectives against one another which involves the construction of rules of mediation between different frames of meaning. Now if the internal unity of paradigms is exaggerated they tend to emerge as closed systems of thought, self-enveloping universes; and the task of moving from one to another becomes impossible to accomplish. One way to overcome this problem is to attempt to redefine it: instead of accepting frames of meaning or paradigms as discrete, self-contained enclosures each excluding all others, it might be argued that (GIDDENS, 1976: p.144): "all paradigms ... are mediated by others". For instance, if the rational/comprehensive (50) and the disjointed/ incrementalist (51) forms of planning are viewed as two fundamentally different, mutually exclusive paradigms(52) of planning (GALLOWAY and MAHAYNI, 1977) -- the "older" and the "succeeding" one, respectively -- then the latter mode of planning cannot be fully grasped apart from its relation to the former as a <u>critique</u>. The rules, conventions, methods and procedures of a paradigm as a set of social practices cannot be learned in isolation from other alternatives that are replaced or discarded by its adoption. Learning what a paradigm is not is as important as learning what it is.(53)

CHAPTER TWO

The art and science of urban planning.

C H A P T E R T W O

The art and science of urban planning.

Introduction and outline.

1. Social science and the "scientific revolution".

2. The emergence of urban planning.

3. Urban planning and the social sciences: the "borrower" and the "lenders".

   3.1 Cities as the focus of interest of a variety of scientific disciplines.

   (A) The "social physics" tradition: social/spatial interaction as a "law" of nature.

   (B) Ecological models of the city.

   (C) Location theory.

(D) Common underlying presuppositions of the three traditions of modelling social/spatial phenomena.

(E) The metaphor of the machine: its model of knowledge, man, and societal arrangements and planning.

3.2 "Incommensurability" of paradigms and interdisciplinary research: multidisciplines and some "interdisciplines".

3.3 The movement towards comprehensive planning.

Footnotes to chapters one and two.

Introduction and outline

This chapter is, perhaps, the longest in the thesis and its structure may prove difficult to grasp for there are many themes that are intertwined in it. It was the first to be written, and was subsequently revised and redrafted in the light of results from investigation into the philosophical and epistemological underpinnings of models as components of scientific inquiry. The original goal was supplemented with a number of subsidiary objectives. This has resulted in a rather complex articulation of the material.
It has proved necessary to subdivide the chapter into two separate units: chapters two and three. However, this outline covers both of them and traces very roughly the main lines of the argument. Though sharing common themes these chapters must be seen as making independent contributions.

The discussion begins with a review of the way in which the methods and procedures of the natural sciences were introduced in social science (section 1). There follows an examination of the origins and foundations of the field of urban planning, and links with certain social sciences are traced (section 2). It is section 3 of chapter two that presents a more involved argument. On the one hand, it attempts to explore the reasons why urban planning and other social science disciplines are connected and how the latter have contributed to planning research. Two main reasons are given:

(i) Due to the way human knowledge is compartmentalised into disciplines, each one of them looks into the world from some disciplinary perspective peculiar to it and selects aspects that are relevant to its interests. Interdisciplinary integration is not always effective or even possible but in urban planning, where several disciplinary perspectives converge, it is at least one prerequisite for successful results. If the trend towards holistic, comprehensive, systems approaches does not recede then interdisciplinary research becomes even more necessary.
The contributing disciplines in planning are drawn mostly from the social sciences (sub-section 3.1).

(ii) The rapidly changing social context of urban planning creates problems of adaptability of old methods and practices to new conditions. The social sciences have contributed to planning literature a number of critiques of the social consequences of older planning approaches and have pointed to ways for possible improvements. Moreover, the critique of the humanists, which sometimes emerges as blindly "anti-planning", has warned of the dangers of placing overwhelming emphasis on technique and scientific procedure at the expense of irreducibly human qualities of social life (chapter three, sections 1-3).

On the other hand, it is sought to demonstrate that the methodological tradition of social scientific research which has been absorbed in urban studies is not independent of particular philosophical and epistemological positions akin to the view of science advanced by philosophical positivism. Even if positivism (in the sense specified below) is not to be found easily in discussions of contemporary philosophy of science, its methodological inheritance to the social

sciences has had a lasting effect and has cultivated a particular attitude towards social enquiry (sub-section 3.1). Three research traditions of urban studies are considered in terms of the models of aspects of social/spatial organisation they have given rise to: "social physics", urban ecological models , and location models . Greater emphasis is placed on spatial interaction models due to their special relevance in planning and transportation studies (items A,B, and C).

The linkages between these research traditions and positivist epistemology and methodology are shown to be intelligible and the well-known critique of positivist views is extended to them (item D). It is suggested that the guiding metaphor of this world outlook is the machine. Considerations regarding the "model of man" that is accepted by the mechanistic world view and the style of planning that would be compatible with it lead to certain reservations as to the appropriateness of mechanism as a source of insights into the study of social life and the planning of societal affairs (item E).

The main theme of chapter three is about the role of the ideological elements of urban planning. These are taken to be inseparable from any planning undertaking. A scientific, technological approach to problem-solving in planning will therefore have to allow for such value elements. These may be impossible to reconcile if the view taken of science is one which postulates a sharp division between facts and values (section 4). Finally, the chapter concludes with a discussion of one such synthesis put forward by Britton Harris in which scientific, humanistic, and problem-solving aspects of urban planning are seen in an integrated framework (section 5).

1. Social science and the "scientific revolution".

The paradigm of a science of the artificial emerged from the interaction of different but interdependent streams of intellectual activity in the nineteenth and twentieth centuries, which were in turn founded on the spectacular successes of science after the seventeenth century. Resorting again to the history of science proves rewarding in this specific context. With the termination of Medievalism in science (54) intensive scientific activity in the seventeenth century sparked off what has been called a "scientific revolution" (BOCHNER, 1966: p.108). The major developments in physics achieved by Newton through his laws of the motion of heavenly bodies -- which gave that period its characterisation as the "age of physics" -- impressed contemporary and subsequent generations of scientists. The symmetry, economy and structural qualities of the Newtonian system was considered an ideal toward which scientists strove. They attempted to establish the reasoning that lead from a fragmentary state of knowledge about the movement of the planets to the abstraction of certain principles which explained in synoptic form a large body of seemingly unrelated data.

The rapid development of modern physics during the seventeenth and eighteenth centuries was the outcome of concentration of research efforts on a central division of physics called "rational mechanics" (55) which made extensive use of mathematics. (56) With the beginning of the nineteenth century, mechanics became a model of mathematisation for all physics and gradually for all the other disciplines

of science as well. Although there was some reaction among philosophers against the wisdom of letting the use of mathematics expand too far and too deeply in science, the trend towards mathematisation was not arrested and it has been an integral part of science since.

It is unnecessary to follow the historical development of science in any greater detail. Its phenomenal successes to date have achieved the accumulation of vast amounts of theoretical and empirical knowledge and have deeply influenced mankind. Ever since Newton formulated his theoretical scheme, scientists dealing with man rather than the physical world were contemplating the possibilities of duplicating the successes of the physical sciences in the fields of intellectual endeavour that were studying man and society. It was presumed that this would be attained by adopting into these fields the basic rules and procedures governing the reasoning of the physical sciences. The transposition of the methodology was justified on the assumption -- which was also a conclusion at that time -- that the physical and social worlds were at least sufficiently similar so that the fundamental method of reasoning applicable to one could be transferred, with suitable adjustments, to the other.

The intellectual movement of Utilitarianism in the eighteenth century epitomises the influence of scientific method on the thinking of the period.(57) By deliberately trying to exclude from their reasoning all traces of 'a priori' knowledge and to base every premise on facts, the pursuers of the movement to apply the mind to social issues acted as if the mere self-conscious application of reason on the way men behave was the essence of science. By the beginning of the nineteenth century the pervasive desire to be scientific and to lean on observation

had permeated the thinking of most researchers dealing with man and society, and had initiated a vast output of social research. Called the age of scientific method the period saw workers like Comte, Mill and Spencer dominate the field of the study of society.

Their approach to acquiring knowledge of the natural and social world was mainly founded on Empiricism [58] and the concomitant effort to eliminate intuitive, 'a priori', and metaphysical assumptions from what was to be accepted as legitimate scientific knowledge. Auguste Comte(1798-1857) introduced both the word "sociology" and the term "positive philosophy" into the scientific vocabulary. In his view, the science of man and society -- i.e. sociology -- was to be the culmination of "positivism" (GIDDENS, 1974: pp.1-3).[59] Now, positivism as a philosophy may entail a number of theses which have not been formulated by Comte but have a much longer tradition in philosophy. However, Comte's use of the term refers to a definite view of the "logic of science" -- or "scientific method" -- which dominated the scientific thought of the nineteenth century. In that account, scientific knowledge was taken to be the paradigm of all valid knowledge. Science was seen as the potential provider of solutions to all major practical problems facing the world of man and society.[60]

Positivism in the social sciences usually -- but not necessarily -- amounts to the programmatic rule of methodological naturalism, that is, the view that the social sciences and even the humanities have basically the same aims and methods as the natural sciences. This doctrine must rely upon some stated or unstated conception of the character of natural science and, consequently, is to some extent connected with the epistemological assumptions of philosophical positivism.[61]

One set of such assumptions which is usually associated with positivism is an extreme form of Empiricism, which reduces science to statements about directly observable facts and eliminates as meaningless any sentence that is neither analytic nor synthetic or empirical:[62] e.g. metaphysical statements. In a very broad sense, it is possible to refer to an approach towards doing research in social science as positivistic -- or as containing positivist elements -- if it strongly emphasises the anti-speculative attitude with regard to the development of theories, the ideals of caution, clarity and precision, and the preference for scientifically solvable and practically useful problems.

In a stricter sense, positivism in the social sciences -- as it is presented in discussions in contemporary antipositivist literature -- may be seen to involve three main groups of issues which appear connected, although acceptance of one set of assumptions does not necessarily entail the other two. Thus, (GIDDENS, 1974: pp.3-4):

(i) The social scientist is taken to be a detached ("neutral") observer of social "reality" which he studies by employing the methods of the natural sciences -- with the aims of the latter in mind. Social and human conduct is observed and studied as an "object" equivalent to the objects of the natural sciences. The phenomena of individual subjectivity and purposeful behaviour are not taken to require any different approach to that employed in the study of physical phenomena.

(ii) The goal of social scientific inquiry is taken to be the formulation of"law-like" generalisations, as is the case in the natural sciences. This involves the social scientist in analysis or "interpretation" of his subject matter.

(iii) The social sciences are taken to be "neutral" with respect to values and normative issues, just as the natural sciences are claimed to be. On this account, the outcome of social scientific inquiries has a technical character: the knowledge acquired is purely instrumental in form and does not carry any logically given implications for practical policy issues or for the pursuit of particular values. This is especially relevant for any discussion or critique of scientific approaches to the study of social phenomena in the context of disciplines which place strong emphasis on policy issues -- such as urban planning and economics.

The introduction of the positivist attitude in the social sciences has had a profound and pervasive influence on the development of theoretical knowledge and the methodological apparatus of the disciplines studying man and society; an influence which is still present to date despite the dominant antipositivist tendency in contemporary philosophy of social (and natural) science (BEGED DOV and KLEIN, 1970: pp.311-326). The generalisation of the use of mathematics in natural science subsequently affected the social sciences, too. Economics was a "moral " philosophy until its transformation, mainly through the seminal work of Cournot(COURNOT, 1838/1927), into an extensively mathematised discipline. Fechner introduced quantitative concepts in psychology (FECHNER,1860); and the efforts of nineteenth century biologists to apply mathematics in various areas of their field were described by (THOMPSON, 1917/1942). Quetelet's work on "social physics" (QUETELET, 1835/1869) and Le Play's "Méthode d'observation" (LE PLAY, 1879) deeply influenced the thinking and methods of emerging social sciences, such as sociology (LAZARSFELD, 1961: pp.164-202). (63)

The steady acceleration in the increase of knowlegde in the natural sciences and the concomitant achievements of technology established confidence in scientific reasoning to such an extent that by the first quarter of the twentieth century most social sciences that had developed a distinct field of study were either using or experimenting with scientific methods and the tools traditionally employed by the scientists. These disciplines were moving towards more exacting standards of inquiry, and were being converted to the belief that many concepts of the natural sciences provided useful analogies for theory development in the social sciences.

The deep methodological changes in the social sciences did not take place without strong and at times sensible opposition. Several social scientists and philosophers have argued that scientific reasoning is unable to show the way to the solution of augmenting social problems, especially moral ones; and have insisted upon the need to revive emotional attachment to ideology.(64) Already since the nineteenth century -- the age of the universal recognition of the almost unlimited powers of reasoning based on scientific methods -- social science had been accused that it sought to derive human goals by empirical inquiry. Contemporary critics of naturalistic ethics point out that on the one hand, scientific resoning cannot determine the nature and the content of values that are held, or ought to be held, by society; and on the other hand, that it is impossible to discover generalisations about human activities that correspond both in universality and in durability to the laws of the physical sciences. Therefore, it is claimed, the effort to attain the methodological rigour and precise formulations of the physical sciences is not founded on contentual correspondence between the two domains,

but it originates in scientism: the premature and slavish imitation of the physical sciences (vonHAYEK, 1942); (von HAYEK,1943); (von HAYEK, 1944). Whatever the underlying sources of the growing disbelief that it is possible to discover universal generalisations about society, there appears to emerge in contemporary social science a tendency to abandon 'reason' in favour of emotion, cultural and moral values, and tradition. Social scientists are on the verge of an "age of subjectivity" in contrast to the past search for objectivity through scientific reasoning. The circle is almost complete.

2. The emergence of urban planning

The process of disciplinary subdivision of science had an important parallel development. Distinct areas of application of knowledge were identified and were functionally labelled as professions; and, subsequently,as separate disciplines. Notable examples are agriculture, architecture, various branches of engineering, and spatial planning. It is possible to employ the term "planning" to refer to a number of distinct activities for it is a generic term. It is being applied to the management of businesses, organisations, operations, economic development, social change, and the like. This also holds when the term is qualified as "spatial planning".(65) In the context of physical (or geographical) space, "planning" appears in expressions such as "urban planning", "town planning", "town and country planning", "environmental planning", etc. Depending on the socio-political context

within which these expressions are applied, the term "planning" may denote totally different activities and its use is, therefore, not unambiguous. For example, "planning", in the above expressions may mean any of the following activities (ALLISON, 1975: p.55):

(i) Whatever occurs is a course of action publicly chosen from among possible alternatives -- a state of affairs which is characteristic of a holistic, utopian world marked by the absence of "individuals".

(ii) Coordination of courses of action in terms of specific goals and objectives.

(iii) Subjection of the actions of both individuals and groups of individuals or organisations (wholes) to some form of public control which need not be guided by any specific goals and/or objectives.

(iv) Provision for future "growth", "development", or other eventualities by projecting current trends and contingencies; such projections serve as the basis for formulating strategies and policies by administrative bodies -- planning as the provision of "instrumental" knowledge in an advisory rather than decision-making capacity.

(v) Projections of trends combined with forecasts of future situations, based on certain given conditions (e.g. goals and objectives) and leaving other factors open to choice; leading to a listing of strategies and policies with preferences attached to them after relevant assessment.

It is not difficult to see that the type of planning which has been taking place in the United States belongs to category (iv), above; while in the United Kingdom planning has taken the form of categories (iii) and (v). In the ensuing discussion, the expressions "urban planning", "spatial planning", "planning", and "urban spatial analysis and planning" will be taken to refer to one and the same type of activity

(but accepting reasonable variations). This is the activity of planning and control of change in urban settlements, within the political framework of Western pluralist democracies.

Although the practice of designing human settlements has existed almost ever since man began to build towns and to make decisions about their future, the emergence of modern town planning as a more or less well-defined field of professional activity is a relatively recent event. Both in Britain and the United States there had been concern over the effects of uncontrolled urban growth on living conditions in towns as early as the 1840's. Such growth was due to the massive scale of industrialisation that took place in most Western nations, starting with the eighteenth century industrial revolution in Britain.(66) Alarmed contemporary thinking is best illustrated in (BOOTH, 1892-97/ 1906), (ENGELS, 1892), (ROWNTREE, 1876) and later (MASTERMAN, 1909/ 1960); they represent the "Victorian protest literature".

The fundamental causes of that situation were manifold (WEBER, 1899). However, the absence of effective control over urban development was soon identified as an important factor in the environmental deterioration of the cities. The Civic Reform movements that were formed in America shortly before the Civil War; and increased consciousness in Britain concerning the undesirable consequences for urban societies of indiscriminate and unregulated urban growth without the necessary supporting services, resulted in the introduction of legislation principally aimed at the environmental improvement of the cities.(67) This concept of a physical "evil" amenable to a physical "solution" was instrumental in bringing into being the activity of controlling and planning the system of urban land uses, and in delimiting

the professional scope of that activity. Visionaries like Owen, Howard, and Geddes [68] deeply influenced the formative years of land use planning and laid the foundations for its ideology. That is, that physical, environmental and control measures could, and should, solve the problems created by the "evils" of the large city (CLAWSON and HALL, 1973: p.33).

Thus, the activity of urban planning may be said to have been the outcome of the fusion of an ideological and a pragmatic perspective. The former was reflected in the thinking of the social reformers and "utopians" -- of both liberal and socialist political beliefs -- who held various visions of some ideal combination of urban settlement and human community. Their conceptions entailed the ideals of individual freedom and social equality, on the one side, and of a harmonious man-environment relationship, on the other. These they advanced as normative conceptions of how towns and cities ought to be and the kind of life and society that their inhabitants should have. Planning was a systematic effort at reconciling individual freedom and social equality (the man-man relations) and regulating the relations between man and his environment in terms of these ideals. The pragmatic perspective was exemplified by considerations of the "problems" of the "physical evils" that had befallen most human settlements. Such "problems" were pressing and it was practically useful to try and provide "solutions" to them. This approach was well within the tradition of "pluralistic empiricism" -- characteristic component of philosophical pragmatism -- which represented a method of investigating piecemeal, but in context, the physical, biological, psychological, linguistic, and social problems which are not resolvable by a simple metaphysical formula or 'a priori' system (e.g. of the type

advanced by Karl Marx) (WIENER, 1949: Ch.9).

In terms of the backgrounds of those involved in the early planning movement, the most vociferous, articulate and well-organised bodies concerned were those with the construction and design skills of engineering, architecture, and surveying, together with professionals in the field of law. Thus, the Town Planning Institute and the American Institute of Planners were founded early in the twentieth century [69] by people who had received training in areas other than planning, and who attempted to provide "... a new type of professional skill, or a milieu of existing skills..." (McLOUGHLIN, 1969: p.24) to deal with the increasingly serious problems of the cities. The interest of these professionals in planning was a by-product of their principal occupational concern and was permeated by disciplinary orientation. Architects tended to approach planning as a large-scale architectural design exercise, while engineers viewed it as the task to establish standards which achieved objectives such as the provision of sufficient light, air or public services. At the other end of the professional range, surveyors considered planning as the problem of wise management of land within the confined interest of the public authority that they served.

During the inter-war period, this first generation of town planners -- with their newly acquired professional consciousness and orientation, but limited in their effectiveness by lack of supporting planning legislation -- were faced with a complex of rapidly changing socio-economic and technological circumstances.[70] These were manifested in the accumulation of severe social, economic and environmental problems that began to seriously disrupt urban life.[71]

In Britain, awareness of the social undesirability of these trends compelled the Government to consider the introduction of radically interventionist policies concerned with the imposition of controls over industrial location and the use of land. A series of official commissions of inquiry, initiated in 1937,(72) culminated in the introduction of the first purposefully developed planning legislation: the 1947 Town and Country Planning Act; (73) and in the authorisation of the preparation of a number of ambitious plans for certain towns and urban regions.(74) With the foundation of the first effective legislation the field of town planning had reached the stage of some disciplinary recognition and integrity.

The preceding brief historical review greatly assists in the tracing of the developmental trajectories of certain fundamental concepts of urban planning that appear to be relevant in the context of the ensuing discussion. Up to the early 1940s, the writings of the visionaries of planning (alias utopians)had influenced practising planners to the extent that an ideology of planning was clearly taking shape: a normative concept of the environment -- the village, the city, the region, and their clear-cut functions -- together with a normative notion of man -- his needs, his aspirations, in short his way of life.(75) In Britain, this orientation towards an ideal spatial structure at equilibrium was implicit in the new planning legislation of the 1940s, although the latter dealt more explicitly with methodological and practical implementation problems of town planning rather than with theoretical issues.(76)

The emerging post-war planning paradigm -- what is referred to as the "natural social harmony model" (HEBBERT,1973: p.22) -- took as

its starting point the data on population categories, that is, households, firms, motorists, and so on, as a system of individuals located in physical space, rather than as entities within a field of competing social groups. Their needs were assessed on the basis of certain empirically established technical requirements (e.g. residential densities)as well as on the basis of certain fixed concepts of an ideal environment.

The underlying assumption of this "model" was that these groups of individuals would tend towards a "natural" (harmonious) equilibrium -- coinciding with the ideal structure of the city -- under specified spatial conditions (HOWARD, 1902); (ASHWORTH, 1954); (FOLEY, 1960); (BENEVOLO, 1967). Solutions to social problems would be sought through a manipulation of the physical setting within which the given population of individuals conducted its affairs. Adjustments of the environmental setting would act as equilibrating forces upon the population. Thus, it was generally accepted that "a well-designed physical environment could promote and guarantee an ideal social order" (BUTTIMER, 1971: p.146).

This concept of urban planning as "ameliorative problem solving" (BERRY, 1973: p.16) led to the assumption by the planners of the role of social (or collective) engineer. To create the set of specified spatial conditions that were considered as prerequisite for the existence of an "ideal social order" the planners had to manipulate directly the urban environment and, by implication, the social organisation of the population. The social engineering function of the planners was established upon two premises (HEBBERT, 1973: p.25). First, that there exists an identifiable, single public interest:

universal social imperatives should transcend the sectional interests of population groups. (77) Second, that the planning professionals possess privileged knowledge of that public interest. (78) The "neighbourhood" conception (PURDOM, 1945: p.199); (WOODBURY, 1953); (WILSON, 1966) leading to comprehensive slum clearance operations and redevelopment at the community level; and the principle of separation of non-conforming land uses, (79) leading to strict land use controls, zoning, and extensive surgery on existing structures at the urban and metropolitan levels emerged as the standard, "physical determinist" solutions of the social engineering approach to tackling the problems of urban societies (MEYERSON and BANFIELD, 1955); (ALTSHULER, 1965).

Benefiting from the advantages afforded by hindsight, it is not difficult to see that with these conceptual and tactical developments town planning had reached the stage of a certain internal structuring. This becomes manifest in its two distinct yet intertwined focuses of interest:

(i) The ideological or "theoretical" component whose seeds are to be found in 19th century social theory (in the positivism of Comte, Spencer and Mill) and in the ideals of the first visionaries of planning.

(ii) The methodological or "procedural" aspect of planning which, guided by "theoretical" concepts, is concerned with the operationalisation of these ideals and the application of the principles in real life by approrpiate means and procedures.

3. Urban planning and the social sciences: the "borrower" and the "lenders".

The long and arduous process of evolution of the urban planning activity and its reaching a stage of maturity such that planning could be identified as a distinct profession and, subsequently, be examined in terms of whether or not it constituted a discipline in its own right did not take place in isolation from other fields of scientific endeavour. The forming of its theoretical background and set of methodological rules involved planning in a long process of borrowing in terms of both concepts and techniques from other disciplines, notably the social sciences in the 1930s and the behavioural sciences (80) in the early 1950s (ROBINSON, 1972: p.23). The perceptible inevitability surrounding the process of adoption and adaptation by urban planning of conceptual frameworks, methods of reasoning , and techniques from other disciplines can be attributed to two principal groups of factors, the following:

1. The prevailing conditions with regard to the ways human knowledge was organised during the formative years of planning. Three distinctive but closely interdependent sets of circumstances can be identified:

(i) Interest in human settlements is shared by a number of disciplines.

(ii) Inter-war period trends towards multidisciplinary, then interdisciplinary research.

(iii)Realisation of the need to expand the scope of urban planning by

taking into consideration other relevant factors in addition to the traditional purely physical and environmental ones.

2. The emergence of significant new social needs -- generated by fundamental changes in the fabric of urban society; and the availability of improved technological capabilities initiated a process of change in the methods and ideology of urban planning. The latter's lack of success with its early modes of operation was an additional impetus towards such reorientation of approach.

These issues are explored below: those under (1), in this chapter, those under (2), in chapter three; and implications are drawn for the current urban planning "paradigm" -- if it is accepted to employ this term to refer to a generally agreed way of "doing planning".

3.1 Cities as the focus of interest of a variety of scientific disciplines.

Involvement of a number of disciplines in the study of human settlements is a logical consequence of the way in which man's cognitive processes are organised. The same phenomenon attracts the attention of different disciplines. Disciplinary perspectives may result in different objective definitions of otherwise identical phenomena. Consequently, any event that is being experienced is characterised by a certain number of relevant contexts which correspond to the points of view held by different disciplines which are concerned with that event (ABLER etal., 1971: p.55). Consider, for example, the construct (81) "town".

This is intersected by several contexts within which the construct may be validly viewed. Obvious dimensions of "towns" are time and space: their relevance gives rise to the interest of historians and geographers. However, other important contexts of the same construct, such as economic, political, social, psychological, anthropological, administrative, regulatory(planning) generate distinct fields of study which attract the respective disciplines which aim at describing and explaining the construct "town" each from its own particular perspective. Within each of these disciplines certain ways of looking at the subject-matter of interest may come to be established as dominant over other perspectives and may assume the status of a locally sovereign paradigm -- in the Kuhnian sense.(82) Although there may not be any "ultimate" grounds for suggesting that some particular way of looking at the world is "true" and ought to be adhered to exclusively in any research undertaking, it is possible to agree to assess the fruitfulness of a "paradigm" by its results in scientific inquiry; or -- alternatively -- to pursue some particular perspective until an improved version of it or a totally new perspective becomes established and accepted by the community of scientists in the discipline concerned.

The study of the city has been approached in different ages from various -- often contrasting -- points of view. "Utopian"thinking of early philosophers such as Plato and Thomas More, and of "functionalists" like Leonardo Da Vinci, preceded the more practical, nineteenth century "utopian" social reformers such as Bellamy, Howard, Buckingham, and Salt; and twentieth century visionaries like Geddes, Le Corbusier, Wright, and Fuller -- the latter being called a "technological utopian". (83) The thinking of Patrick Geddes deserves special mention

for it is important not only because it has laid the foundations for the emergence of urban planning as a dinstict field of professional activity focusing on the city, but also because it has fostered an entire tradition of urban studies.Geddes clearly saw (GEDDES 1915) that the so-called "problems" of the city -- e.g. problems of public hygiene, of industry and economics, of social and community organisation in urban space -- were not amenable to individual "solutions" that were independent of one another. He took such "problems" to be inextricably interrelated aspects of one <u>indivisible whole</u> that is, of the life and activities of human beings as social agents within a definite space. Viewing this social/spatial complex as a whole rather than as a mere aggregate of component parts, Geddes advocated a "synoptic" approach to its study: the "together-seeing" of the "trinity of land, people, and work". This reflects an essentially <u>holistic</u> approach to the city, with urban planning assuming a dual role: (i) interrelating the various aspects of urban life viewed as a whole; and (ii) bringing together the various disciplines which study each of these aspects separately, into an integrated, interdisciplinary synthesis; with synergistic effects over and above corresponding uni-disciplinary contributions. Thus, it may be unjustified to call Geddes a strictly "utopian"thinker. Rather he should be seen as a gifted visionary for he developed a range of powerful ideas that are still valid today, as is shown by the proliferation of holistic approaches to urban planning via the conceptual platform of General System Theory.

The movement of the city from the pre-industrial to industrial status generated the impetus for the development of a number of theoretical approaches to the study of human communities and urban growth. The emergence of social science in the second half of the nineteenth

century (LAZARSFELD, 1961: pp.148 ft.) provided the framework within which a number of prominent thinkers endeavoured to study social organisation in space at the urban level, to solve the "problems" of the growing cities, and to consider the future form and function of such urban concentrations of population, industry, and services. These workers conceded that the "utopian" thinking of social reformers, which was seen to be founded on some combination of 'a priori' and empirical conceptions of the "problems" and roles of the city in the context of their view of society, did provide intuitive sources for the development of"plausible stories" about the city and its "problems".

However, they tended to reject "utopian" approaches as "theories" of the city for they took them to be more or less speculative and not founded on experience and observation, and inductive reasoning in accordance with the canons of the predominant conception of the method of natural science in late-nineteenth and early twentieth century. Arguing that such speculative approaches could lead to serious misunderstanding of the "real" nature of, and constitution of the "structure" of, urban settlements social scientists attempted to gain an understanding of urban affairs and social-spatial processes by resorting to the methods of rigorous scientific analysis and inquiry that had proved so successful in the natural sciences. Empirically based research into the social and spatial organisation of urban societies, carried out from a variety of disciplinary perspectives, yielded several pioneering conceptual frameworks which did provide the foundations for corresponding research traditions. Some of these have had important latent implications for "theories" in urban planning and for methods of study of its subject-matter. Some of the research traditions that have proved fruitful in urban planning are discussed below.(84)

It should be emphasised that reference to these theoretical schemes is made in order to achieve objectives other than explicating the actual substantive content of research approaches such as "social physics", ecological theories of the city, location theory, etc. -- for which the bibliographical citations of the original works, and of important later contributions and commentary should be consulted. This is standard textbook material and its inclusion here lies outside the scope of this dissertation. The purpose of the ensuing discussion is to try and substantiate the argument that the city has been the subject of interest of a variety of disciplines, but the results of the research efforts did not produce any "general theory of the city", only partial accounts of aspects of the city. Moreover, the form of the inquiry in these research traditions will be commented upon; and will be seen that it seeks to emulate -- at least in principle -- some conception of the canons of scientific method akin to philosophical positivism. Finally, the allegiance of these research approaches to some overriding world outlook, such as mechanicism, will be explored.

(A) The "social physics" tradition: social/spatial interaction as a "law" of nature.

The approach which has come to be known as "social physics" may be seen as the first conscious attempt to provide a description of human social organisation in terrestrial space, including the city.(85) It was developed within a framework of a strong naturalistic programme which took mind and the life element as dependent upon, included within, or emergent from, material nature -- and not as being prior to or in some way more real than it. It further assumed that human

beings are essentially physico-chemical systems, and can be studied in exactly the same way as the rest of the physical world by employing the conceptual apparatus and methods of the natural sciences. The nineteenth century tradition of "social physics" emerged as the result of the attempt to follow the operation of the supposedly fundamental laws of physics from one level of being to another, until a consistent mechanistic world view was built up which streched from the molecule, at the one extreme, to the total space or universe, at the other -- including man, society, cities. Everything in the world of man was taken to rest on, and result from, the interplay of mechanical, mathematically measurable and quantifiable forces.

This mechanistic world view lent support to, and received it from, social thinkers who held a conception of society as nothing more than a collection of individuals -- viz. a nominalistic, individualistic, or atomistic view of the social world. It was opposed by those social philosophers who viewed society as a unity or whole and who usually -- but not always -- associated their holistic conceptions with organismic views of the social world. Individualistic views of society tend to regard it as essentially an equilibrium system. Only the individual being is real; an aggregate, group, or totality made up of such individuals is nothing more than a simple collection of constituent parts. The whole has no reality of its own apart from the reality of its constituent parts. "Wholes" or "systems" are merely names given to such collections of individuals, and have no properties of their own apart from those of their constituent parts. On this view, the coherence of society -- or the coherence of individuals in society -- must be due to the balancing of individual forces. Social institutions are seen as objective resultants of subjective energies (POPPER, 1945/1973: II; p.98).

The coexistence of individual human beings is taken to be analogous to the coexistence of say, the "heavenly bodies" of astronomy. Each one of these latter has its own push and pull, and all manage to get along with each other without mutual destruction because their attractions and repulsions ultimately balance one another.(86) Mechanics and astronomy thus link naturalism and nominalistic social thought.

The tradition of"social physics" provided the conceptual foundation for the development of a number of macro-descriptions concerning social interaction in geographical space. Although such descriptions proved invalid at the micro-level, say, the level of the individual man (OLSSON, 1965: p.44), they found wide application, especially after the early 1940s, in many disciplinary contexts including geography, sociology, demography, economics of retail trade; and after the mid-1950s, in transportation studies and urban planning. In the field of urban planning, in particular, the most widely employed models in the development of structure plans for cities -- viz. various forms of spatial interaction models -- have originated in the "social physics" tradition. It is perhaps significant that one of the commonest criticisms of this approach is that it provides descriptions of an empirical regularity which has not yet been explained.(87)

The "gravity model", whose contemporary formulations have been renamed "spatial interaction models", is underlain by an "implicit philosophical belief: that the development of the city followed natural laws, rooted in the tendency of societies to follow economising rules, or what Zipf called the principle of least effort" (HALL, 1975: p.297). The search for "natural laws" of urban development and human arrangements in

geographical space shows the strong conceptual links of this approach with the tradition of nineteenth century positivism. Apart from Carey's substantive contributions, John Stuart Mill's methodological and epistemological theses are clearly reflected in the underlying rationale of the "gravity model".(88) Mill's philosophy of science was developed along the lines of the thoroughgoing empiricism and inductivism of Francis Bacon, and involved the establishment of rules governing the logics of induction and deduction. His advocacy of the inductive-deductive scheme of reasoning as the account of scientific method which is universally applicable both to the natural and the social world alike -- these being taken to be amenable to investigation by the same methods and procedures,i.e. those of natural science -- has been prominent until Popper's treatment of the logical problem of induction (POPPER, 1957/1972) and the emergence of the hypothetico-deductive scheme as the explanation of the "method of science".

Mill's views regarding the systematic investigation of social life and of man in society (MILL, 1965) were that social science should be modelled upon Newtonian mechanics. The positivist conception of explanation and the non-necessitarian account of causation as "constant conjunction of events" are consistent with Newtonian mechanics. On this model, social science should enable prediction of events so that they can be more effectively controlled. Its task would be to allow calculation and solution of the problems of an emergent industrial society: social conflict,competition, conceptions of free enterprise, etc. Social and political beliefs would be matched to what was scientifically possible. The approach would be to first establish scientifically the feasibility of some solution, and second to match social and political beliefs, goals and objectives to this.

Scientific calculation of the feasible would be effected by applying the laws of "social physics" which would be discovered inductively by empirical observation of social phenomena. This would be"scientific knowledge" hence absolutely "certain" and positive and would thus ensure that people would accept its findings and would pursue only those changes that were possible given that knowledge . Moreover, Mill's atomistic view of the universe led to an individualist interpretation of the social sciences. The basic "elements" or "atoms" in society were individuals. Hence the laws governing the behaviour of people in social interaction were to be inferred from the laws which govern the behaviour of individuals apart from society. In this view, the laws of psychology were to provide the basis for all the laws and regularities in social life; and the reasons for this claim were both ontological and epistemological.(89)

There is little difference between this brand of nineteenth century positivism and the "gravity model" formulations that are in currency today. Even the rationale of social problem solving has remained more or less unaltered in its principles. The "gravity model" in its various formulations exemplifies the search for regularities and laws of social behaviour -- say, the "physics" of population distribution (STEWART and WARNTZ, 1958). The fact that it deals in large aggregates of people rather than individuals has been criticised and advocacy of studies of behaviour at the micro-level (HARRIS, 1968) as well as attempts at disaggregation of the model's components (WILSON, 1969) indicate recognition of the potential contribution of the laws of the behavioural sciences. Probabilistic derivations rather than earlier deterministic formulations of the model (HARRIS, 1964), (WILSON, 1967), attempted to account for the "fact that individual behaviours

do indeed contain elements of free will and of social and personal history which are inaccessible to us for analysis and prediction" (HARRIS, 1968: p.378). Thus, by introducing elements of a tautological arithmetical theory, viz. the theory of probability, there was the implicit admission of "considerable ignorance" (CURRY, 1966),(GINSBERG, 1972), regarding what is taking place in people's minds and consciousness -- if such unobservable "things" are accepted at all in this conception of society.

The source of the "gravity model" (90) is any system of celestial bodies for which the Newtonian law of universal gravitation holds. The model is related by analogy to this already understood natural phenomenon. Its subject is a range of phenomena concerning the movement (flows) and settlement (location) of people in geographical space -- and by extension, of activities -- which it seeks to <u>describe</u>, rather than <u>explain</u>(91), in terms of their spatial interdependence.(92) In this sense, it attempts to depict lawful relationships in "flows" between locations. The analogy between Newtonian mechanics and aspects of human organisation in physical space has contributed to the transference of the vocabulary of physics into the realm of social life. Thus, "gravitational pull" becomes "interaction" between, say, two areas or spatial units (zones). "Mass" of the heavenly bodies is interpreted variously as "size" -- e.g. population, number of workers, residents or households, shoppers, travellers to work, and the like -- depending on the nature of the interaction that is to be accounted for. Alternatively it could be taken to refer to "attractiveness" which, suitably "operationalised", is expressed as "employment opportunities", "housing vacancies","shopping floor space", "available expenditure", etc.

Temporary movements of people -- viz. interaction between locations in the form of the journey to work, shopping trips, etc. -- are viewed as "flows" which do not alter the pattern of locations but rather reflect it. They are said to be "impeded" in terms of the "friction of distance" separating their origins and destinations; or in terms of costs, not necessarily pecuniary, involved in travelling. Interaction is variably expressed, say, as trips people make between locations of people and locations of businesses, recreation facilities, and other people. The model has also been explored in investigations of permanent movements of population, in the context of geography, which reflect adjustments in location -- for instance, migration (OLSSON, 1965). Now "interaction" is not a term referring to directly observable and measurable entities or behaviour; it is a theoretical term which has to be "operationalised" if it is to be of any use in predictive applications of the models. The concept was found to correlate well with migration, retail trade, journeys to work, telephone calls, etc. (LEE, 1968: pp.3/7-3/9).

Other terms of the spatial interaction models (S.I.M.'s) which refer to non-observables -- e.g. "impedence" or "friction" of distance -- have tended to be more difficult to express "operationally", i.e. to state them in terms which refer to observables and which are amenable to quantification. Thus, "impedence" has been interpreted in a number of ways: (a) as purely physical distance between two locations (either airline or over-the-road distance); (b) as a number of "opportunities" intervening between two areas (STOUFFER, 1940) -- which eschews considerations of physical distance (HARVEY, 1967: p.560), though it involves rendering operational the notion of "opportunities" which is capable of being interpreted in a number of ways; (c) as a generalised cost function; cost of transport; travel time; general measures of

access; etc. (LEE, 1968: p.3/8). The model parameters, e.g. the exponent of the inverse power function of distance in a S.I.M., tend to vary substantially from case to case which indicates that the importance of the influence of distance in spatial interaction is context-dependent.

Life styles, cultural traits, local travel patterns, structural components of the city, etc., would be likely to affect the correspondence between model description and some actual state of affairs (COWAN, 1972). This seems to present no great difficulty for the researchers who concern themselves with the technology of building and using the models. The techniques and procedures of parameter estimation or calibration are numerous and quite effective in what is demanded of them; they are well explored in (BATTY, 1976: chs.6-8). Model parameters are fitted statistically to local conditions prior to application of a S.I.M. to "predict" magnitudes or locations. However, the problems that may be created by uncritical acceptance of the established categories of official statistics in terms of variance between them and the concepts they are intended to illuminate have been lucidly pointed out in (HINDESS, 1973), (CICOUREL, 1964), and (HOLLIS and NELL, 1975).

In general,statistics and statistical facts are the product of some specific system of concepts (conceptual categories) imposed upon "raw experience"; they are very closely associated with some set of technical instruments of measurement which presuppose acceptance of theories of measurement and instrumentation. Hence all statistical data may be taken as theory-dependent and their use as "purely" observational, theory-neutral evidence is therefore not to be taken for granted. Often the requirements for operationalisation and calibration result

in conceptual distortion of original theoretical formulations (BROADBENT, 1970[a]), (BARRAS, 1972). However, in any kind of empirical inquiry of the sort that is involved in developing and using S.I.M.s it is impossible to avoid operational definitions of theoretical terms to enable the latter to have empirical import. The main problem is to determine the precise nature of this empirical import.

Philosophers of science differ on this issue. There are those who take operationalisation as a doctrine and regard concepts that are not objectively specified as applying to, or measuring, something in the world of experience as invalid or unacceptable in scientific discourse. While such an extreme view is not to be found among contemporary writers in the philosophy of science, its adoption by the "scientific" social sciences of the 1950s and early 1960s has still left its marks today in those disciplines. The logical status of statements effecting the connection between terms reffering to non-observables and observation terms is being disputed by rival schools of the philosophy of science. The discussion is directly relevant to the role of models in cognitive inquiry and hence is examined in some detail in Part II, where other views on this issue are introduced.(93)

The spatial interaction models developed on the basis of the "gravity model" have been found to describe fairly well a wide variety of movements of population aggregates or flows between locations, though they seem to fail to account for spatial behaviour at the level of the individual household or small group -- at least in their non-disaggregated formulations. This problem has received considerable attention and pioneering work by (WILSON, 1969) has introduced several modifications and improvements of the original "gravity model". This

research dealt with questions of (a) disaggregating the "mass" variables of "demand" (origin) and "supply" (destination) leading to a more realistic representation of the market mechanism; (b) providing more detailed specifications of "attractiveness" of residential zones to different classes of individuals (types of households or occupations); (c) relaxing assumptions of static equilibrium in S.I.M.s (SENIOR, 1973), (ECHENIQUE, et al., 1974). Moreover, allowance was made for different modes of transport, and constraints were introduced on flows both at the producer zones (origins) and at the attractor zones (destinations) as well as on the overall system budget, to yield the constrained S.I.M.s [94](WILSON,1974), (WILSON, 1975).

These modifications have transformed a simplistic formulation, such as the original "gravity model", into a much more realistic statement and allegedly capable of better capturing the complexity of the city and of providing more informed, reliable, and relevant predictions. Although disaggregation took care of criticisms regarding the grossly aggregative nature of S.I.M.s which was thought to impair their capability of capturing complex relations in the city, the strictures concerning the inadequate theoretical foundation of the "gravity model" were not thereby answered. The main concern seems to be that the "gravity" hypotheses are based on a "spurious analogy with Newtonian physics", and that they have been"modified, without any justification, to fit human contexts. The derivation is at best heuristic and not theoretical", and is based on an analogy which may be misleading (SENIOR, 1973),(NEDO,1970). Now in this line of criticism one should clearly distinguish between the process of developing a model of some unknown set of phenomena based on the drawing of an analogy with a set of

phenomena that are already understood, and the way in which this kind of reasoning was applied to the "gravity" hypothesis.

As a process of moving from the familiar to the unfamiliar the drawing of analogies is a well-established and much acclaimed practice in natural and social science.(95) But there are good and bad ways of carrying it out. Whether analogies are to be regarded as mere heuristic devices -- as is suggested, say, in (HEMPEL, 1965) -- or anything more than that is open to philosophical argument. However, in the particular case of the "gravity hypothesis" it may be claimed that there was no exploration of the initial analogy in terms of substantive hypotheses which would give a coherent account of how the phenomena concerned did in fact take place, or why they were generated in that particular way. Hence the criticism of the "gravity hypothesis" for its inadequate theoretical exploration of the analogy with Newtonian physics is sound. There is, of course, a more general level of criticism concerning the appropriateness of drawing analogies from phenomena of physics to describe aspects of social life. This is associated with the methodological debate in the social sciences, i. e. whether or not there are methods and procedures for the study of the world of man and society that are different from the methods of natural science and peculiar to social studies. As this problem is explored later in the thesis, there will not be any discussion of it at this stage.

A criticism which is concomitant with that about the adequate theoretical basis of S.I.M.s concerns their "mere" descriptive as opposed to their explanatory function in inquiry.(96) The models have been found to describe fairly well a set of phenomena (at the

aggregate level) though placing credibility on predictions derived from them, even if they are statistically acceptable, may be open to discussion from a logical point of view. In an older view of science, so-called "descriptivism", which is not currently fashionable, all that was required of inquiry was a complete and parsimonious description of the facts. This would automatically explain for it would leave nothing unaccounted for. But if something was so explained it would be possible also to predict its future occurrences, for explanation and prediction were seen as "sides of the same coin", having the same logical structure. Extreme "descriptivism" is not to be found in contemporary philosophy of science though there are still those who espouse the thesis of logical symmetry between explanation and prediction. The latter has been subjected to damaging criticism (SCHEFFLER, 1963).

In another view of science, description and explanation are essentially different. Explanation provides answers to "why"-questions which involve postulating some causal mechanism or structure underlying the phenomena of interest, or constructing some coherent causal narrative which accounts for the generation of those phenomena.(97) As Cowan correctly points out (COWAN, 1972), the models developed in the tradition of "social physics" do not attempt to explain <u>why</u> the phenomena they describe should take place. Their lack of "causal explanation" is not satisfying even though the models have had predictive success. This shortcoming is particularly obvious when the models are applied interculturally: models developed on the basis of empirical material from advanced nations often fail to account for states of affairs obtaining in less developed nations or societies (ibid.). But this is not uncommon with other methods that are employed in urban planning, and indicates that the methods are not neutral,

atheoretical instruments which can be applied indiscriminately irrespective of cultural context. They presuppose "theories of instrumentation", and impose a specific kind of order on the reality that they seek to investigate which is not inherent in that reality. Hence the dimensions of that order have to be investigated and their compatibility with existing forms of life should not be taken for granted but should be regarded as a subject for investigation in its own right.(98)

In the absence of explanatory accounts of phenomena of spatial interaction, it could be argued that a predictive instrument such as the "gravity model" might be useful in its role in planning. If this view is taken, then S.I.M.s could be regarded as "black boxes": it would not be known why what happens does in fact happen, but predictions would tend to be more or less reliable. The models would be taken as "as if", "fictional" constructs useful for some specific purpose, say, prediction, without making any claims as to realism of interpretation -- though they would have to reflect the world in some very basic way: not anything can give reliable predictions of complex phenomena. If it generates useful predictions, then the model could be preserved as an instrument for that particular purpose, but not criticised for its lack of realism and crudity. The problem here is that if one has a good instrument of prediction, and prediction is all important in his activities, one relaxes the search for improving knowledge and attaining better understanding of social/spatial phenomena, and focuses on technical refinements of the instrument: improved calibration techniques, better statistical treatment of variables, computerised applications and algorithms, and other advances in technique rather than substance. Unfortunately,

this is an obscurantist view of intellectual progress in the field of planning whose success is predicated as much on accuracy of predictions and forecasts as on an improved understanding of its subject-matter. As Popper has so convincingly argued, if prediction (and control) were the only goal of science then the Ptolemaic geocentric theory of the cosmos would still be in currency today for it yields sufficiently accurate predictions in relation to its successor, i.e. the Copernican heliocentric theory (POPPER, 1963: ch.3). However, there are many who would regard a model (as well as a theory) successful if it simply produced required predictions and enabled anticipation and control of some set of phenomena, instead of providing a rational account, i.e. explanation, of the process by which prediction is arrived at. If a model is taken as a predictive device, as an instrument for prediction or a technique which is aimed at accomplishing some specific function, then the adequacy of the model is to be assessed pragmatically by its results in application.

For instance, are predictions from S.I.M.s accurate and reliable? Has the design and calibration of the models -- a prerequisite for prediction -- reached a level that is appropriate to the demands made of the models? Are the results produced by the models cast in usable form or do they need further disaggregation to meet the needs of the planning exercise? Are the substantive assumptions of the models adequate or do they require modification? Could the predictive mechanism of the models be made more "transparent" ? With regard to the latter question, several workers have attempted to improve the theoretical basis of S.I.M.s with encouraging results (HARRIS, 1964), (NIEDERCORN and BECHDOLT, 1969), (WILSON, 1970).(99) Irrespective of the validity of the substantive content of these

contributions -- and there may be several points that are weak in these formulations (KING, 1976) -- they do represent steps in the right direction of much needed theoretical development. Indeed, A.G. Wilson has conceded that enough energy has been expended in the 1960s in discovering and refining "techniques", perhaps at the expense of conceptual clarification and theoretical advance (WILSON, 1972) -- a view that is shared by (OZBEKHAN, 1970).

Providing the search for improved knowledge and understanding is not arrested by accepting the convenience of relatively accurate predictions as an ultimate end in itself, there is nothing wrong in making <u>use</u> of S.I.M.s in their predictive instrumentalist capacity. For as Hippocrates declared in what must be one of the earliest statements on "muddling through" and pragmatism, "life is too short; the craft is too hard to learn; the occasion so urgent". But this discussion has not explored the issue of whether models as elements of what might be loosely referred to as the "methods and procedures of natural science" are appropriately applied to the description and prediction of social/spatial phenomena. To argue that they are is to accept at least that the subject matter of the social sciences and urban planning is in principle amenable to study and investigation by the same methods and procedures as the world of inanimate nature -- i.e. a weak programme of methodological naturalism[100] -- though the models that are being investigated may be said to have been developed within an underlying framework of a strong naturalistic programme connected with positivism, which rejects any differences between the "natural and the "social" as well as any differences in the methods employed to study them.

Now, to accept methodological naturalism either in its strong or weak form cannot be regarded as self-evident. It raises a number of important issues which revolve around the kind of "model of man" that urban planners adopt in their model building efforts and the issue of compatibility of their methods of study and analysis with that "model". In the very few lines that Batty devotes to this question of naturalism (BATTY, 1976: p.354) he takes it to be a "matter of judgment and experience" whether the "natural" and the "social" are substantively distinct. However, as is argued elsewhere,(101) this is not an empirical question to be settled by "scientific method"; and answers to it are not independent of some "prior philosophy" or system of beliefs. Hence, what was argued above with respect to S.I.M.s was contingent upon acceptance of some form of methodological naturalism in investigating social/spatial phenomena -- though no commitment to this view has been made by the author.

The "gravity model" and its derivative spatial interaction models were reviewed at some length -- unlike the two classes of models of social/spatial phenomena that are to be examined below -- for they are the kinds of models that have been most extensively employed in modern urban planning and transportation studies (in the 1960s and early 1970s). Their use as instruments for prediction involves forecasting likely consequences of alternative action hypotheses regarding development and/or control measures and policies.(102) They are said to have discharged what was asked of them relatively satisfactorily although there will always be room for improvement of predictions contingent on further refinement of the models and theoretical advances in the understanding of social/spatial phenomena.

Without embarking on the "humanistic" critique of scientific approaches to the study of aspects of social life -- at this stage at least -- it may be conceded that: if the epistemological and ontological presuppositions underlying these models are accepted; and if criticisms regarding their substantive content and other more technical issues are well taken; the models themselves have accomplished their predictive task within the range of acceptable predictions that are attainable in fields such as planning.

Therefore, in such specific circumstances as those stated above these models cannot be said to have been useless. They may be criticised as theoretical failures and there is much to agree with in this line of critique. However, in the absence of theory one has to start from somewhere and these models could be seen as appropriate starting points. Even if spatial interaction models are viewed as failures, the fact that they have initiated precise statement of a set of assumptions concerning aspects of social/spatial organisation renders them more instructive than the eventual success of some other confused or inadequate theoretical schema. For the failure of a precisely stated model is likely to suggest specific modifications that would be required in developing more realistic and more explanatory models. Hence the model building activity as such should not be confused with the success or failure of particular models to make specific contributions to the planning process.

Models should not be viewed as mere techniques but as tentative end results of some cognitive process. What could be criticised is the epistemological framework within which models have been developed and the range of presuppositions that are implied by the acceptance of such a framework, viz. some particular view of knowledge

and science. Moreover, taking models as one element of the "methods and procedures of natural science", their use in fields outside of science could be questioned on the basis of claims to the effect that there are fundamental differences between the subject matters of the natural and social sciences. The "methodological debate" and some of the complex issues it gives rise to will be investigated below. At this stage, suffice it to state that there is much effort expended and satisfactory results obtained from scientific investigation of social life. Within their frame of presuppositions naturalist approaches produce knowledge of society which is consistent. A critique of naturalism will therefore have to start from the underlying premises of this methodological doctrine and its incorporation into the logical empiricist programme. For it is the latter's epistemological theses that are attracting most criticism in contemporary antipositivist philosophy of science.

(B) Ecological models of the city.

The development of another conceptual approach to the study of socio-spatial organisation, as it is reflected in the pattern of urban land uses, originated in the application of certain of the principles and processes of (biological) ecology to the field of social sciences giving rise to human or social ecology.(103) This so-called "ecological approach" to the study of the city was rapidly adapted from the field of human ecology into a variety of urban studies with diverse

disciplinary emphases. Over the past forty years, it has been the starting point for most considerations regarding the utilisation of urban land (CARTER, 1972/1975: ch.9).[104] The underlying concepts of the "ecological approach" were forged into a systematic spatial model of urban uses by E.W.Burgess, which has come to be known as the ecological theory of city growth. The main idea of Burgess' "concentric zone model" is that urban land uses tend to display zonal organisation concentrically arrayed around the centre of the city. The processes of"competition" and "dominance", the latter associated with "invasion" and "succession", are invoked to account for the underlying mechanism whereby the postulated concentric arrangement of urban land uses emerges.

The"ecological approach" keeps well within the same mechanistic world view thatnurtured the "social physics" tradition: it sees the urban land use pattern as the concequence of a number of operative forces analogous to those that exist in nature. It further subscribes to methodological naturalism in its use of the methods and principles of the natural sciences to study aspects of human social organisation in urban space. It is founded on extensive empirical analysis of urban phenomena and inductive reasoning leading to a rationale and a theoretical underpinning which subsumes hitherto unrelated and fragmented observations under an ordered and predictively fruitful set of categories. It also resembles "social physics" in terms of the level at which it pursues the study of its subject matter: it focuses on the macro-level, surveying the whole land-use pattern of the city in the search for an overriding explanation. However, it appears to differ from "social physics" formulations in that it represents the first systematic, "scientific" attempt to develop

a quasi-explanatory account or "theory" of urban structure, as opposed to the "mere" descriptive statements of "social physics".(105) For it affords, by way of analogy with familiar processes, a synoptic view of the mechanisms underlying the "functioning" of the urban area. Despite later criticism concerning the lack of transparence in the description of such mechanisms as the operation of the impersonal allocative mechanism of competition as well as the simplistic constitution of the postulated mechanisms, the importance of the theoretical work of the Chicago School cannot be denied.(106)

It stimulated a general interest towards systematic theorising and empirical hypothesis formulation regarding aspects of socio-spatial organisation at the level of the city. A number of elaborations of the early "ecological models" were introduced, notable among them being the so-called "sector theory" of the city (HOYT, 1939) and the multiple nuclei conception (HARRIS and ULLMAN, 1945). The ecological focus on sub-social processes of competition for space and reference to price mechanisms regulating the value of urban land was an obvious pointer for urban economists. It gave rise to a strong trend in urban studies, which stressed economic forces and variables and resulted in direct statements of urban land-use structure in the context of the market for urban land and of economics(CARTER, 1972/1975: p.172).

(C) Location theory.

The research tradition in urban studies which has come to be known as "location theory" is the third conceptual scheme which has guided the search for models and empirical generalisations in the context of urban planning and aspects of spatial organisation. "Location theory" is the term commonly employed to refer to a number of different approaches which appear united in their task of investigating concentrations of human activity [107] in geographical space,[108] but may differ with regard to spatial scale of analysis, nature of "factors" or "forces" that are hypothesised to determine location patterns in space,[109] and level at which analysis is carried out -- viz. micro- or macro-level.[110] The conceptual and theoretical debt of "location theory" to classical economic theory is indisputable. Most locational analyses employ concepts such as competition (either perfect or imperfect); attribute great importance to the role of the markets for goods and services and urban or agricultural land; postulate land values and rents,[111] on the one side, and land uses, on the other , as mutually determining; consider functional measures of distance, such as cost of transport and the "friction of space".[112]

These analyses yield descriptive statements and/or empirical generalisations by adducing various"forces" [113] which are taken to induce concentration of activities at point agglomerations [114] or in areas. Such "forces" are then employed to construct a framework within which the location of concentrations and distribution of activity is analysed, and the empirical laws which govern spatial organisation and other aspects of activities are sought. Interest is focused on "places" of activity concentration which are characterised

by agglomeration of two or more activities carrying out functions for individuals or firms.(115) It is postulated that the mechanism of the market is operational in the process of competition among some firms to occupy the same location within a "place", which results in rent payments. Most location studies and models adopt a reductionist approach in their use of the all-unifying and all-embracing concept of "economic man" (116) who is assumed to always behave rationally in his spatial context -- viz. behaving so as to (usually) minimise costs.

"Location theory"was of interest originally to economists alone; but even among economists there initially was a strong belief that locational analysis was one of the least interesting and least significant areas of economics. However, in the last twenty five years, "location theory" has come to be established in the forefront of at least four disciplines. Thus,geography treats it as one of its main subjects. Urban and regional economics takes it to be one of the theories of economics: much of the work in that field was stimulated by earlier developments in "location theory" and the so-called land economics (ALONSO, 1964: pp.6-9). Regional science, which is claimed to be a new social science discipline, has been substantially contributing to the development of location studies. Finally, urban planning and "systems engineering" -- the latter activity concerned with location and management of urban public services and facilities, and urban transportation systems -- employ many of the findings of "location theory" as central parts of their comprehensive approaches to solutions of the "problems" of the city (ISARD, 1972: p.vi).

Despite the strong influence of location theory on many systematic empirical studies of the city and of social/spatial organisation, there have been many well-aimed criticisms of the various location models.(117) Strongest among such strictures seem to be : (i) those referring to the simplistic structure of the models;(118) (ii) those criticising the range of unrealistic assumptions made in these models.(119) One line of argument against the latter sort of criticism does concede that the assumptions may be unrealistic and not applicable to empirically observable situations. However, it claims that it is possible to maintain such assumptions if they are taken in an "as if" sense (MORRILL, 1970: pp.70-73), (WEBBER, 1972: p.8). In this view, which is associated to an instrumentalist conception of science (120) and scientific method, assumptions such as rational behaviour based on the principle of benefit maximisation -- viz. the "economic man" or "rational man" postulate -- need not be taken literally; people may be viewed "as if" they behaved rationally, etc.(121) So long as accurate predictions can be derived from the models, the nature of their assumptions need not cause concern. The models are seen simply as <u>instruments</u> for deriving predictions and not as true representations of actual states of affairs. The test of their success lies in their usefulness in yielding accurate predictions which will enable control of the real world situation.(122)

Most of these criticisms, and others that have not been mentioned, may be valid -- depending on the view taken of science and the process of scientific inquiry. However, they should not obscure the importance of "location theory" as a body of systematic studies which has provided strong stimuli for the proliferation of research activities regarding urban social/spatial organisation. Most locational analyses have focused on aggregate patterns of location and land use and attempted

to provide descriptions of the formation of these patterns as a result of the influence of various "forces" or "factors". Thus, the conceptual scheme of "location theory" may be seen to lie within the mechanistic world outlook common to the two approaches discussed earlier. It sets out to provide an account of the pattern of land uses and the function of central places by abstracting a restricted number of economic variables (or "forces") from the universe of such variables affecting land use structure, and by seeking points of equilibrium of such "forces" in the spatial context.

It is concerned with the macro-level and takes it to be the mere aggregate of individual locational choices rather than seeing it as possessing properties peculiar to the whole. Having originated in the context of economics, locational analyses have been developed by adherence to the principles of scientific reasoning flowing from the prevailing view of science in that discipline. The methodological naturalism of location studies is associated with a thoroughgoing empiricism which is manifested in the search for solid empirical foundation for locational hypotheses, in the adherence to the regularity view of causation(123) (as constant conjunction of events), in the pursuance of "positive knowledge" of the sort that natural sciences such as physics and chemistry regard as ideal, in the disregard of all but the simplest and most quantifiable aspects of social values and norms, in the rejection of value-laden analyses of ideological elements of human action, of the world of power and politics, and of subjective states of mind of social agents acting in a spatial context. These observations suggest that most location studies have been carried out based on the implicit presupposition of a particular conception of science and its associated epistemology and methodology, which may be

identified as positivist. More recent studies have tended to assume an instrumentalist position with regard to the cognitive status of theories and models, which takes these to be instruments for prediction, rules of inference, and the like.

(D) Common underlying presuppositions of the three traditions of modelling social/spatial phenomena.

The research traditions that were discussed above -- namely, "social physics" or spatial interaction models, urban ecological models, and location models --have concerned themselves with description and explanatory sketches of the spatial consequences of social organisation at the level of the city and, occasionally, of the region. Each of these traditions takes a different view of the same social/spatial reality it is concerned with; each stresses some aspects of it and excludes others; each imposes a different order on the same set of phenomena. Although they may be said to have certain core notions in common, e.g. the concept of distance and its influence on human arrangements in geographical space, their substantive differences are more important than their similarities. However, these research traditions share a common ontological and epistemological foundation which may be akin to philosophical positivism -- though not necessarily in the form in which the latter was stated in the second quarter of the twentieth century. Moreover, they have been informed by the underlying "root metaphor" (PEPPER, 1942) of that foundation, the metaphor of the machine. Some of these debts to and linkages with

positivism and mechanicism are explored below for they have important implications for the kind of knowledge of social/spatial reality that urban planning ought to be pursuing,and for the ways in which such knowledge is to be acquired.

The foundations of the tradition of thought in terms of which spatial theorising and model building (of the kinds that were reviewed above) have been couched are to be found explicitly in the positivist account of the "logic of science" which is connected with a particular methodological approach, and implicitly in the ontological and epistemological assumptions of philosophical positivism in the Comtean, Millian, and "Vienna Circle" tradition. Spatial research has been concerned with the discovery,and suitable expression into some symbolic language, of lawful regularities and uniformities in phenomena of human arrangements in geographical space. It has been reluctant to ascribe, even inimical towards, any particularly important role to considerations of ideals, values, societal norms, and beliefs that might be, among other things, significant in influencing the spatial movements and locations of individuals, households, businesses, etc. It has been seeking to maintain a value-neutral attitude towards such "unobservable" aspects of human conduct. In so doing, it has implicitly eliminated as non-legitimate or non-meaningful a range of non-empirical categories of concepts whose absence may be said to have impoverished social/spatial analyses and models.

Further, it has tended to disregard processes which are significant in-use in everyday life and hence ought to be empirically acknowledged. Considerations of, say, the world of power and politics are totally absent from the spatial research traditions that are being investigated. Their search for "positive" knowledge of their subject

matter has limited the scope of their inquiries to the strictly empirical and calculable. The objectives of a positivist programme are clearly identifiable in these research undertakings, though they are implicitly accepted rather than explicitly stated and pursued. They become manifest as "dispositions of thought". Thus, research findings in terms of lawful generalisations and/or models are to be non-evaluative, purged from speculative or metaphysical notions of willing, feeling, purpose, intuition, consciousness, and other such concepts pertaining to the "meaning" aspects of social life. Instead, they are expected to stress knowledge founded on the solid empirical bases of observation, facts, data, experience, and other"empirical-sounding things".

However, this is a very loose characterisation of what may be referred to as a "positivistic attitude"; and if the criticisms are to be of any substance some idea must be given of what a positivist programme would generally comprise.(124) Now, identifying "the" positivist programme may be as elusive as, say, investigating phenomena of consciousness is to positivists. Broad features of a positivist attitude towards social inquiry have been sketched above but this is not an adequate presentation to support the critique of positivism in spatial modelling. There are many interpretations of what is entailed by the positivists' programme both among positivists themselves and, even more so, among their critics.

Other empiricists criticise the positivists for narrowness of methodological programme, for introducing into scientific inquiry a version of empiricism which unnecessarily restricts what is to count as legitimate knowledge of the world, and for failing to provide a plausible descriptive account of how science is to be practised or

a prescriptive account of how it ought to be practised which both adequately reflects conditions in scientific inquiry and guides it. Hence their argument is not aimed against empiricism as a theory of knowledge but rather concerns the way in which empiricist epistemology is to be adhered to in scientific research.

In contrast, non-empiricists criticise positivism mainly for its emphasis on the strictly empirical and observable to the exclusion of phenomena of consciousness and mental states knowledge of which is impossible for positivists, unless they are manifest in overt behaviour (as in, say, behaviourism), but is allegedly possible for intuitionists, introspectionists and certain "apriorists" -- though they would differ as to how they would go about obtaining such knowledge. These "subjectivists" may be said to concentrate their attack on behaviourism(125) rather than on the other epistemological issues that seem to occupy antipositivist/empiricist thinkers. Following (GIEDYMIN, 1975: p.276), the tenets that may be said to constitute a "strict positivist" programme might be stated in the form shown below.

(i) There is no knowledge other than scientific knowledge of natural and social phenomena; mathematics and logic (the formal sciences) are included in scientific discourse but are non-factual. Other realms, such as ethics, in which enquiry and belief cannot be firmly established, are to be excluded from legitimate scientific discourse.

(ii) Extreme empiricism advanced either as phenomenalism(126) or as physicalism.(127) Both of these restrict scientific statements to only those about observable "facts" and reject as meaningless all sentences that are neither analytic nor synthetic.(128) For instance,

metaphysical statements referring to human feelings, desires, values, beliefs, norms are to be excluded from science as meaningless (on the "verification theory of meaning").[129] This requirement is to be met by value-free inquiry in which the scientist is to operate as a neutral and detached observer of "facts out there".

(iii) Philosophy is to be reduced to philosophy of science, viz. the "logic of science",[130] and of logic and mathematics.

(iv) Methodological naturalism in the social sciences predicated on the assumption of the unity of method and identification of the aims of natural and social science.

(v) Norms in general, and ethical norms in particular, are to be regarded as sociologically relative.

(vi) Scientific knowledge conceived as above is viewed as having great social value, and its practical applications are stressed.

Now, Giedymin points out that each of these descriptive [apart from (vi)] statements or rules can be either accepted or denied by positivists. This creates a large number of philosophical positions which could be labelled positivist (sixty four, to be precise and this is not an exhaustive list). It is a matter of convention to decide how many and which of the above tenets have to be maintained by any writer to justify his being characterised as a positivist. Therefore, the term "positivism" is not unambiguous and has to be applied with caution and giving full recognition to the complex combinations of various doctrines that may be legitimately referred to as positivist. Especially in connection with the social sciences and humanities, tenets (ii) and (iv) above have played an important role in shaping the positivistic attitude towards

those realms, and it is these that are predominantly criticised in much of contemporary antipositivist literature.(131)

Apart from these more general doctrines of positivism there are specific epistemological theses which are criticised by other empiricist, antipositivist writers.(132) Very roughly these are : (a) the "dual language" thesis requiring the clear separation of terms referring to observables and those that refer to non-observables, i.e. theoretical terms. This was shown to be untenable.(133) (b) The predictivist account of explanation, in which prediction and explanation are regarded as having the same logical structure; and its interpretation in the claim that predictive accuracy is entirely equivalent to explanatory power renders predictive performance a fundamental criterion for the acceptance of theories. In realms of cognitive endeavour in which scientific criteria of adequate explanation are hard to satisfy (e.g. in spatial theories) the tendency prevails to regard predictive accuracy as necessary and sufficient criterion for explanation. The assumption of structural equivalence between explanation and prediction has been criticised by many writers (HANSON, 1958), (SCHEFFLER, 1963).

For instance to explain <u>why</u> an eclipse of the moon occurs, or why an industry locates where it does, is not simply to predict exactly when it will take place, or where it will locate, respectively. Although an adequate explanation has to be able to do that, it is not only that that it is required to do. In addition, it has to provide a plausible causal narrative or account of why things came to be as they are. But this involves one in going <u>beyond</u> what is revealed strictly in experience and observation. Moreover, if to explain means to make

literal claims about underlying structures and processes that may be taken to generate a set of phenomena, then the theoretical entities (non-observables) that are postulated in these claims cannot meaningfully be conventionally or stipulatively expressed in terms of observables -- viz. operationalised. If they are to be taken in an "as if" sense then this might be acceptable; but if they are to be shown to refer to real entities and processes then their correspondence with statements of observation or experience is itself an empirical matter.(134)

(c) The positivist account of models and analogies in science takes these to be mere heuristic devices and regards their role in scientific inquiry -- in theory construction and testing -- as a subsidiary and dispensable one. They are merely of psychological interest, intellectual crutches for the tender-minded and are not allowed to make any ontological claims about real existing entities and processes which are only made in theories. Their contribution is to be restricted to establishing isomorphism of structure with some theory and interpret it in some way which aids the imagination. They may also be used in prediction, and the test of their adequacy is the success of their predictions.(135) However, the requirement of isomorphism with some theoretical schema precludes their being mere instruments for prediction irrespective or their substantive content (i.e. whether or not there is any correspondence with experience) as in the "instrumentalist" account of models.

(d) The privileged status of the language of observation is disputed by many writers. What is to constitute the "unassailable" foundations for knowledge of the world is variously and interchangeably referred to as "facts", "evidence", "experience", or "observation". Firstly,

these terms do not refer to the same item, and what they refer to may not be reconcilable. Thus, "experience" -- as a first person account of some occurrence -- may oppose what was hitherto accepted as "facts"; "observation" may invalidate as irrelevant to some issues what was regarded until then as relevant "evidence". Moreover, rock-bottom indisputable "facts" are not to be found, say, in official statistics of government agencies. Hence, there is no qualification of what is to count as evidence, but rather an emphasis on regarding empirical "evidence" as decisive in the testing of theories. But empirical evidence may be found in data of historical, sensory, census statistics, or introspectionist kind. The latter is, of course, rejected as a source of knowledge about an individual's reasons, motives, etc. for acting, since only overt behaviour (in physical movement and speech) can provide empirical foundations for knowledge of social and human phenomena. Further, the possibility of maintaining a sharp dichotomy between theory and facts is rejected for facts are perceived subject to some guiding theory or way of looking at the world.(136) Now, if the theory-ladenness of facts is accepted, and there are many convincing arguments that it should be, then the search for positive knowledge that is free from theoretical frameworks, ways of looking at the world, and culturally given elements in knowledge, ought to be abandoned. Facts cannot by themselves dictate knowledge; their interpretation may be regarded as having potential for knowledge.

(e) The way in which models and analogies are used in the positivist conception of science has attracted considerable criticism from writers who defend different views of science -- also empiricist[137]. Models and analogies are employed as essentially heuristic devices by positivists. They perform the function of a scaffolding which assists in the formulation of a coherent body of lawlike relations. Once the scaffolding is removed, the lawlike relations remain, standing by themselves, to be assessed against empirical evidence. Models are taken as attempts to establish structural isomorphisms between some domain of phenomena (accounted for in some theory) and its symbolic representation in a model. The structure that is depicted in the model is to exhibit laws and regularities that are found to hold between observable phenomena.

Now, this position is criticised from two different viewpoints; one which shares with the positivists the idea that the structure of relations depicted by some model resides in the domain of phenomena itself (realist account of models), and another which regards such a conception of structure as a fictional construct which is devised to assist inquiry and yield useful predictions (instrumentalist account of models). The former view regards the positivist account as problematic for it is founded on an inadequate investigation of the ways in which the external causes entailed by laws are accounted for. It takes models as descriptions of the system of relationships (potentially real structures and mechanisms) which underlie and generate the observable relations and invariances.

The latter view accepts that there are several equally valid ways of conceptualising experience. The idea that there are structured relations in nature is essentially a mental construct devised for

specific purposes of inquiry, e.g. to provide simple and economical accounts of phenomena, and predict their observable characteristics. Producing a model of some empirical domain is not intended to establish isomorphisms but rather to postulate relationships that are predictively useful. The use of such a model is purely instrumental and the construction of the model is to be governed by criteria of purpose of use -- e.g. prediction -- rather than criteria of conformity with the structure of reality. For a model is not viewed as an element of contemplative activity but rather an instrument specifically designed to achieve certain results. To illustrate these differences in the conception of models (and analogies) take the case of a building and its structure. The kind of interpretation that might be given to the relation between the observable building and its structure -- the latter not being usually subject to sensory perception -- roughly corresponds to the way in which models are conceived in different accounts of science. Here structure denotes elements of style that are related into a coherent whole in which the relationships between elements are more important than the constituent elements themselves. A structure so conceived cannot be apprehended other than by abstraction from observable characteristics of the building. In an Ancient Greek temple, it is not the element of columns or of the pediment or even both of them that could be said to identify it as belonging to the Doric style, but rather some set of elements and their interrelations which could be said to constitute the structure of the building.

One way to view the structure of the building is to regard it as constituting the way in which the elements are actually related and arranged so as to create the physical reality of the building.

The structure may be represented in a model in which, say, arrows correspond to forces applied by some elements upon others; or circles correspond to functional spaces within the building. The model would be taken as pictorially correct if each element of structure and its relations to other elements correspond to an element in the model and its relations to other elements, viz. a relation of isomorphism. Hence, even though the structure is not available to direct observation, it does refer to real relations between constituent elements of the building. This view would be held both by positivists and realists up to the point of examining the nature of the relationships between elements of structure that are postulated in the model.

The former would regard these as depicting laws and regularities holding between observable phenomena. The latter would take the relations of structure as underlying and generating the observable relations between elements. But positivists would take the model which represents the unobservable structure as a heuristic device used to arrive at the lawlike relations between elements and not as referring to something real, since for them real=empirical. Realists, however, would not restrict ascription of reality only to what is observable and would accept that the model could refer to a potentially real structure -- subject to the scrutiny of experience. For them, the structure when identified as real constitutes the "essence" of the building. Therefore, to know the building it is necessary to know its structure and this can only be achieved by building a model and testing it against experience. Another way to view the structure of the building is to take it as a fictional construct which is developed to assist systematisation of relations between the elements of the building, from which to draw inferences concerning, say,

the behaviour of the elements in an earthquake, and the like. There is no criterion of conformity of the model to any real structure, only of fruitfulness in purposeful application. The model is simply an instrument serving specific purposes of the investigation.

It should be obvious by now that the analogy with Newtonian mechanics upon which the "gravity model" and its derivatives are based was taken in the postivist manner as a heuristic device, a scaffolding to be removed after the completion of the intellectual exercise. This exercise was aiming at deriving a set of lawlike relations between observable social/spatial phenomena. As applied to spatial interaction the gravity analogy does not presuppose direct, perfect and specific analogy between interaction between population centres and the attraction and repulsion of celestial bodies. The contention is that there are merely certain analogical similarities in the ways in which , say, distance between "masses" or their sizes affect their relations.

There are also dissimilarities (negative analogy): e.g. population "masses" consist of conscious individuals exhibiting free will performance as against the deterministic behaviour of planets. The source of the gravity model is not selected so as to provide the means for describing underlying mechanisms and processes generative of observable invariances -- as the realist would require. Rather, it is employed in a positivist fashion to produce a model of social/spatial interaction which comprises a set of lawlike relations between observables: the analogy is drawn upon and then removed, leaving the lawful relations subject to the test of experience -- thus developing a coherent body of inductions.

In contrast to both positivist and realist accounts, an instrumentalist approach to the "gravity model" would not place emphasis on establishing correspondence between the structure of relations depicted in the model and the structure of physical reality. Since the notion that reality is structured in some ways is regarded as a fictional but convenient construction for systematising experience and enabling prediction and control, there is no real structure to look for in checking the conformity of the model to facts. Thus, the model has to be complex enough to handle the events it sets out to model and produce required predictions enabling anticipation and control of events. But it need not enable a rational account to be given of the process by which prediction is arrived at. There is an upper limit to the complexity of ideas that can be understood by man, as well as an upper limit to the complexity of the unit of analysis of the phenomenon being studied which can be intelligently apprehended: would a study of spatial interaction at the level of the molecular structure of the bodies of individuals be intelligible?

Hence prediction and control is all that may be possible rather than understanding and explanation. On this account, "gravity models" should aim at enabling forecasting and control of the events which they depict. They can be developed on the basis of quite unrealistic assumptions about the nature of the phenomena they are concerned with. This will not necessarily invalidate the models since the criterion of their adequacy is to be the success of their predictions (TOULMIN, 1961: p.30): " To discover that events of a certain kind are predictable -- even to develop effective techniques for forecasting them -- is evidently quite different from knowing an adequate theory about them, through which they can be understood". If social/spatial

phenomena are difficult to deal with due to their complexity, the reason why they are not impossible to deal with is that they do not occur in all the ways in which they might -- to paraphrase (CAWS, 1963 :p.164).

Most of the preceding antipositivist criticisms originate from other empiricist philosophers who see in positivism an inadequate and restrictive view of science. However, when the antipositivist critique moves into issues of the social sciences then : (i) not all of those who might be referred to as antipositivist/empiricists make contributions that are relevant to the social sciences and the "methodological debate"; and (ii) the strongest objections come from so-called humanists who tend to subsume all scientific approaches to the study of social life under "positivism" -- but differ as to their views of how to attain their ideal of human-centred inquiry of the world of man and society.(138) Some humanists do not exclude scientific approaches from the study of human phenomena but make special demands on what a "science of man" could and ought to study -- demands that have a bearing on the view taken of science, which is not to be a positivist one.

The so-called "subjectivists" from among the humanists tend to criticise the materialist ontological foundations of most of science and its denial to "mind" and mental states of any separate existence apart from matter or of one that cannot be reduced to material states. The ontological postulates that are criticised concern the view that the universe is all matter which is apprehended more or less completely through the human senses: knowledge of the world is ultimately founded on experience. In this view, there is no distinction between the "natural" and the "social", between

the material universe and man and social life. The latter are seen as part of the orderly material cosmos and are subject to the same principles of cause and effect that apply to nature. Hence the laws which determine the pattern of the universe would also include the "laws" which determine human behaviour. Notions referring to human conduct -- for instance, choice, motive, free will, voluntary action, reason -- are to be understood in terms of the "laws" of social life.

Restricting discussion to the positivist conception of science, those who accept the general view that was roughly outlined tend to stress systematic empirical observation, and the development of "formal" hypothetico-deductive (or inductive-deductive) rational accounts of phenomena. They pursue quantification and measurement of all observables -- for they take observables to be measurable and their relations reduced to relations of magnitude, this being an important aspect of modern positivism -- and seek to operationalise theoretical concepts in terms of observables. Thus, concepts referring to non-material, subjective states -- e.g. values, norms, goals, purposes -- are to be anchored in experience and expressed in terms which refer to observables -- e.g. behavioural indices of such mental or subjective states.

Moreover, the testing of hypotheses against factual evidence, the employment of "objective" methods and techniques of social inquiry, the sharp distinction between questions of fact and evaluative statements and between facts and theories, and other methodological and epistemological positions referred to above, are generally connected with the positivist account of the "logic of science" and duly criticised.(139) The assumption that the only source of

knowledge derives from the logic, methods, and senses of the inquirer rather than from the "subjects" he studies is also criticised by "subjectivists". The view that potentially "true" knowledge of the social world is gained only through independent, detached observation of actual happenings -- excluding the observer's biases or prejudices -- and the requirement that the inquirer stand outside his subject matter to ensure objective observation of social phenomena is also attacked by "subjectivists".

The latter regard the positivists' approach to investigating the relation of thought and beliefs to action as highly problematic. For the process of explaining social phenomena following their "logic of science" seems to provide accounts of these that do not correspond with what the social agents themselves would recognise or give as motivational accounts for their own actions. They argue that what is important is to study how beliefs and actions are connected in the mind and consciousness of social actors through the process of constructing meaning. They require that terms and categories employed by the inquirer to account for social action are to be couched in terms that are both intelligible to the social agents and derive from their own accounts of their actions.

The positivist view that patterns of human behaviour can be explained in terms of general "laws" of social life, and that social inquiry should address itself to discovering such "laws" from which to derive empirically testable consequences, is criticised by many writers. In one non-positivist account, discovering laws of social behaviour is problematic for it is based on an inadequate analysis of the ways in which the external causes that are entailed by the "laws" are

actually experienced and interpreted by social agents and so cause patterns of observable behaviour. The latter requirement is to be satisfied by detailed description, at the level of meaning, of the mechanisms and structures that underlie human behaviour and cause people to conduct themselves in particular ways (this being a realist account). The explanation of social phenomena by subsumption under general "laws", on the"model of science", is also said to deprive human subjects of their freedom of choice to behave as they will. Moreover, the requirement that such "laws" be general results in their accounting for only some characteristics of the situation they apply to.Such features are normally selected for their causal import. But the abstractive nature of general "laws" of behaviour seems to neglect the full richness and idiosyncracy of individual cases (GELLNER, 1973: p.80).

The positivists' insistence that science involves only the establishment of lawlike relations between observable phenomena imposes the requirement that theoretical terms -- defined as terms referring to non-observables -- be given operational definitions, be operationalised. The view which takes operationalisation as ensuring that the meaning of statements containing theoretical terms becomes their method of verification has been exposed to much criticism and is now defunct in the natural sciences, though emphasis on operationalisation is still placed in the context of the social sciences. Strict operationalist criteria need not be applied to giving to theoretical terms some empirical import -- as required by empiricist epistemology. This is, however, a procedure which is fraught with difficulties for many theoretical concepts seem to loose their originally intended meaning when defined operationally

for there may not exist corresponding observational terms to account for them.

This brings the discussion to the crucial issue of empirical data or the facts that are to provide the unassailable foundations for knowledge of the world of nature and society. The epistemologically and ontologically privileged observational (empirical) foundation for general "laws" of social life is to be provided by official (census) statistics or specially collected data through various surveys. These are the empirical facts to be sharply distinguished from both values, norms, beliefs held by human individuals, and from theories of social life. Now, the main criticism of the positivist use of such statistical material is its being uncritically accepted as the rock-bottom foundations of knowledge of society. All statistics and statistical facts are the product of a specific system of concepts and related technical instruments of measurement. Therefore they are theory-dependent for they involve theories of measurement and instrumentation. Their use as purely observational evidence is thus unwarranted.

There are many conceptual inadequacies in social statistical measurements but the ready availability of such material is always an attraction factor for social inquiry. But the categories employed to collect data for official purposes are not necessarily the categories of theory, viz. they may be seriously at variance with the social concepts and categories which they are intended to illuminate. Statistics are not collected by various agencies for the sake of social inquirers in various disciplines: for the economist, the sociologist, or the town planner. However, such

agencies are usually the only ones to produce such data. Ensuring conceptual correspondence between the variables entering the models of, say, the planner and the existing official categories of data is a major difficulty in any model-building and application exercise. The official categories tend to be imposed on the models; any new data that may be collected tend to follow the established pattern. This seems to restrict conceptual exploration and effect closure of the investigation often prematurely.

For example, consider the case of statistics collected for official records of housing conditions in the city. These go through a fairly complex social process which involves judgments as to whether, say, some building is sub-standard, and to what extent it is below standard. Thus, the individuals involved in producing the official statistics are operating on the basis of implicit meaning systems and concepts which lead them to determine one building as below some acceptable standards and another as meeting them. Moreover, these meanings may well vary both within a single society and between different social contexts (notice the difference between official housing standards in, say, Indonesia, Greece, and the U.K.). Thus, what has to be made explicit is that many of the categories of official statistics are <u>socially</u> rather than <u>naturally</u> defined forms of behaviour or meaning.

While it is necessary to have some broad conception of what it is intended to study, adherence to the strictly defined categories of official statistics may prove detrimental to the outcome of social inquiries and development of models and theories. Hence the categories of official statistics should not be taken for granted

but should be seen as problematic in themselves and as varying over time and location. Perhaps the essential nature of social phenomena should attract the attention of the investigators who ought to try and experience it as directly as possible. The question of empirical data is one of the most important and problematic issues in developing models of urban social/spatial structure. The empirical foundations of models can be traced to census statistics, specially collected data -- e.g. from transportation studies, origin-destination surveys, social surveys, and the like -- and from the pool of validated empirical knowledge. Models pragmatically employed as instruments for prediction and control are essentially oriented towards quantitative data. Their manipulation according to the analytical structure of the model results in specification of magnitudes of variables.

Admittedly, much of planning has to deal with quantities at the level of practice, viz. at the level of proposing concrete measures to further the objectives of some planning exercise. It is, of course, when it derives and manipulates quantities in ways which conceptually exclude and are divorced from "subjective qualities" that the success of planned proposals becomes problematic when seen in its social context of acceptance of policies by those whose lives are affected by them. More specifically on the question of factual data, it is often the case that quantitative information by itself, i.e. without being related to an analytical construct or an argument, enables the drawing of some conclusions in planning -- for instance, a consistently declining population of a city. Nonetheless, this reflects only a trend which is unaccounted for by theory, and whose reliability and endurance is always in doubt. Hence there is need for well confirmed

theories which would guide interpretation of facts and selection of only relevant ones for the purposes of the inquiry. All data, whether in natural or social science, must necessarily be viewed through the lens of theory or accumulated together with a series of background assumptions which render the data less than neutral: either in terms of cognitive interests or in terms of values. "Brute facts" are not to be found .(140)

Problems regarding the deterministic nature of accounts of regularities in social/spatial phenomena must inevitably be faced in all attempts at developing models of such phenomena. For example, the "gravity model" and its derivatives postulate deterministic relations in the movement and locational behaviour of human individuals. This raises questions of adequately accounting for the freedom of the will. The issue has serious implications for the nature and form of systematic inquiry into social/spatial phenomena, events and processes, most of which may be traced to one of the fundamental problems of philosophy: the mind/body problem.(141) If voluntary human conduct is regarded as the outcome of non-physical causes, then mental states of social actors become very significant in any inquiry into human conduct which can only be understood (in the sense of identifying its causes) in terms of such mental states. The latter may be themselves caused by physical factors; but unless they are so caused it is not certain that the same influence will always evoke the same physical response in human behaviour.

In the realm of social/spatial influence factors, the individual responds after <u>deciding</u> on some course of action. Hence "natural laws" of spatial behaviour are not to be found easily if it is accepted that mental states are not part of nature. Moreover, their

predictions of "natural" phenomena from other "natural" phenomena are bound to be subject to the peculiar characteristics of human actors, and hence highly unreliable. Such "laws" and their predictions of behaviour will be founded on evidence which does not relate to mental states apart from nature (i.e. natural ≠ mental), but predicted behaviour would be explained as caused by mental states. This would render invalid the positivists' predictivist account of explanation (since prediction and explanation would cease to have the same logical structure, and each would be based on evidence which is different in nature). However, if prediction and explanation are not logically symmetrical how is it possible to tell which empirical generalisations -- in which no cause of phenomena is specified -- are projectible? That is, how is it possible to establish that such and such a generalisation will continue to hold into the future? This leads one to an aspect of the problem of induction (HOLLIS and NELL, 1975: pp.116-118).

Several directions have been pursued in order to discover a way out of the problem of determinism in human conduct. The simplest and most obvious solution, which also happens to be the least satisfactory one, is to introduce elements of probability in the models accounting for the spatial behaviour of human individuals. However, probability is a derivative concept and depends on some solution to the inductive problem (HOLLIS and NELL, 1975: Ch.3).[142] Alternatively, some assumptions may be introduced into the models regarding, say, rational behaviour, the principle of minimisation of costs of travel or the principle that people will select their residences in a way which minimises their costs of commuting to work, and the like. In such cases failure of the models to accurately predict behaviour is not

regarded as model deficiency but rather as failure of the model assumptions to hold.

If the assumptions are highly unrealistic then the predictive results of the models have very low substantive content for behaviour would be actually assessed by its conformity to the model. If, on the other side, realistic assumptions about mental states are built into the models then this implies that information other than relating strictly to physical behaviour is entering the models. Other views on this problem are, very briefly, (i) to claim that whatever human individuals think or do the "natural laws" of behaviour will hold at least statistically; (ii) to reject mental states as such and accept a materialist view denying existence of mental events. The latter issues in, among other things, so-called behaviourism, (143) which is a doctrine stipulating that all explanations of social phenomena are to be couched in terms that refer or can be made to correspond to publicly observable events, physical movements and speech, i.e. unambiguously given elements in human behaviour -- though it need not deny the existence of mind, only that the "spiritual" cannot enter intelligibly into explanations (DIXON, 1973: pp.5-8). (144)

The above discussion was aimed at illustrating a range of common ontological, epistemological, and methodological presuppositions that are implicitly rather than explicitly accepted in certain research traditions within which models of social/spatial phenomena are developed and are subsequently employed as predictive and systematising instruments in urban planning. It is conceded that the discussion has not penetrated into the philosophical issues

involved to an extent that could justify any wide-ranging philosophical conclusions. However, this was not the purpose of this exploration; rather, it was attempted to reveal the kinds of epistemological and methodological commitments that are implied by taking certain stands in social/spatial research. There are many and well-aimed philosophical critiques of the positivist view of science and of its methodological implications for the social sciences, and most of the philosophical arguments are highly specialised and hence incompatible with the limited objectives of this thesis.

However, enough has been said to substantiate the argument that models and other "methods" of inquiry are not neutral instruments of research but rather their application involves a range of presuppositions which should not be taken for granted but investigated in their own right. They are not the interest-free devices that are alleged to be, instruments for organising thought in rational ways, indifferent to questions of values, beliefs, and world views. They may be said to form part of a language which imposes its own categories and ways of looking at the world (TRIBE, 1972). In actual research of social/spatial phenomena, the abstractions in such intellectual devices as models, conceptual frameworks and general theoretical categories tend to select and institutionalise an inflexible and insensitive set of distinctive features (e.g. variables) (145) as the relevant facts for analysis. The models are the trappings of a more or less residual positivist ideology: theories that do not declare themselves, disguised as programmes for "objective" observation and analysis (STRETTON, 1970: p.52).

(E) The metaphor of the machine: its model of knowledge, man, and societal arrangements and planning.

The positivist programme, as presented in the above rough sketch, may be taken to have intelligible though not necessary connections with the guiding metaphor of the machine. The ensuing discussion attempts to explore such associations and draw implications for the kind of planning that may be compatible with such views. The notion of mechanism is fundamental in the metaphor of the machine. It has received various interpretations of which the one referring to the Newtonian world machine is taken here to reflect relatively accurately the conception of mechanism associated with the theoretical traditions being discussed. The following quotation is thought to adequately explicate that notion of mechanism (EINSTEIN and INFELD, 1938):
"In mechanics the future path of a moving body can be predicted and its past discussed if its present condition and the forces acting on it are known. Thus, for example, the future paths of all planets can be foreseen. The active forces are Newton's gravitational forces depending on distance alone. The great results of classical mechanics suggest that the mechanical view can be consistently applied to all branches of physics, that all phenomena can be explained by the action of forces representing either attraction or repulsion depending only upon distance and acting between unchangeable particles." (146)

The metaphor of the machine may be seen as informing the mechanicist framework in terms of which these research traditions have been couched.

It provides a source for the drawing of several analogies between concepts belonging to the vocabulary of the natural sciences and aspects of social experience. Notions such as "force"; "equilibrium"; "entropy"; "movement" as change of position, but also "movement" as an analogy to physical movement which mentally suggests the application of a "force" or "power" to some social entity; "number of persons" as an analogy to number of"bodies" or "particles"; physical and social measures of distance; etc. are examples of such analogies.

Associated with an empiricist epistemology mechanicism entails a mode of social inquiry which focuses on observable relations between individuals (micro-variables) or between aggregates of individuals (macro-variables) and seeks to establish empirical societal "laws" governing such relations -- in the manner of the empirical laws of natural science. It deals with relationships of parts to parts, or wholes (in the sense of mere aggregates of individuals) to wholes; it does not concern itself with whole-parts relationships or with properties which may be peculiar to social wholes over and above those of their constituent elements (the latter being individuals, firms, or institutions).

Mechanicism meets "par excellence" a range of empiricist and positivist epistemological and methodological criteria:

(a) The entities referred to in its models have properties that are most accessible to direct observation, and if terms have no direct empirical referent (theoretical terms) they must be translated into the language of observables by means of, say, bridge principles (correspondence rules)[147] -- in short, they must be operationalised.[148] The loss of meaning which ensues from operationalisation, as well as

the dual-language thesis itself are the most widely criticised points of this view. (149)

(b) The macro- and micro-variables entering these models are, ideally, amenable to quantitative or precise qualitative measurement. The assumption of measurability of the entities of mechanistic models is carried through to social phenomena.

(c) The variables are amenable to manipulation within some form of controlled laboratory environment.

(d) Such variables are ideally tractable for they can be meaningfully reduced to empirically manageable sub-components and then reassembled without loss of meaning or errors in synthesis(SUTHERLAND, 1973: pp.96 ff). A whole is seen as an aggregation of constituent parts, individuals, or atoms: providing that the rules of aggregation are "appropriate", no peculiarly holistic quality may reasonably be claimed to have been lost in such a synthesis. Indeed, denial of any "holistic qualities" reaches doctrinal status.

(e) The principle of "causal atomism". Mechanism may be said to connote the type of causation which is held by many to operate in the world of physical science: every event is and must be determined by an immediately preceding event. If this assumption were not made, scientific calculation and prediction would not be possible (JOAD, 1936/1957: p.187).

The notion of the machine lends itself naturally to the drawing of an analogy between it and this conception of causation, for in a machine every state is the result of some preceding state. This view of causation is said to be atomistic in that it is concerned with discrete,sequential states or events -- much like links of a chain --

each being directly attributable to the one preceding it. The idea that it is possible to study things, whether they be people, concepts, or mental states, in terms of discrete units which could be mechanically manipulated has found wide application in social scientific theorising -- but also in philosophy and morals.

The conception of events as discrete, atomic entities raises problems of connection between events. One account of such connection between events -- still widely entertained, though not without some serious criticisms -- derives directly from Hume's view of causation as a "constant conjunction" of events. It is always contingent -- some say arbitrary -- in the sense that there is no necessity about such connection between discrete events. Further, it is given to, rather than understood by, the observer in the sense that the observer simply experiences one particular event following another regularly. Since, on this account, it is not possible to say that A causes B, but only that A is regularly succeeded by B, there emerges one form of the extensively debated logical problem of induction: "How can it be established that observed past conjunctions of events will hold for the future?"(SCHON, 1963/1969: p.151); (JOAD, 1936/1957: pp.220-221). "How can one justifiably argue from past events to future events, from the known to the unknown?" (KEAT and URRY, 1975: p.15).(150)

Mechanicism correlates with individualism (WATKINS, 1953: pp.723-743) which, as a methodological doctrine, stipulates that large-scale social events and conditions should be treated as mere aggregates or configurations of the actions, attitudes, relations, and circumstances of the individual actors participating in them. As a prescription for explanation, methodological individualism rejects those explanations

of social phenomena which are not couched wholly in terms of facts about individuals (LUKES, 1977: p.180), e.g. explanations which employ holistic or collective concepts -- such as "social system" -- and macro-laws essentially pertaining to the whole rather than to individuals which "make up" that whole.

Thus, just as macro-properties of a gas (e.g. its temperature) are explained, in physics, as a resultant of the micro-properties of its molecules, so macro-states of the market are explained, in classical economics, as resultants of the dispositions and consequent activities of individual producers and consumers. Much the same kind of reasoning is employed in the well-known derivations of the gravity model of spatial interaction (in the "social physics" tradition) through the entropy maximisation principle (WILSON, 1970); (WILSON, 1974); (GOULD, 1972: pp.689-700). Although there are negative as well as positive elements in this analogy, methodological individualists take the positive elements to be more instructive (DRAY, 1967: p.53). However, the important point is that the entropy maximisation approach is an individualistic approach even though it focuses on the macro-level of analysis.

But the kind of individual human being that enters in the explanations, models, and theories of this outlook is said to be only "spuriously individual" (HOLLIS, 1977: p.12). It is a "model of man" which takes human individuals "as mechanisms that, like less complex physical objects, respond to the push and pull of forces exerted by the experimenter or the environment" (HARRE and SECORD, 1972: pp.30-31). This is the model of a "Plastic Man" as an object in nature, responding adaptively to the interplay between man and environment

(HOLLIS, 1977: p.12). Its main weakness may be identified as the "lack of a self" to apply causal models and explanations formulated within a naturalist/positivist framework. However, this "model of man" is not unique to the theoretical tradition based on mechanicism and individualism but is also accepted by many thinkers who espouse the other "root metaphor" guiding the fundamental forms of social thought: the metaphor of the organism.

When applied to social theorising the metaphor of the machine gives rise to a number of important issues regarding the "model of man" that it presupposes. In this context, the main problems seem to revolve around the extent to which a mechanistic system may be said to plausibly capture some account of the fundamental characteristics of human nature (WARTOFSKY, 1968: pp.380-386). Firstly, one of the main features of the conception of mechanism referred to above, is that it is <u>deterministic</u> in the sense that one is able to predict its operation. Since it is postulated that each state which the machine is in is causally related to the state that follows it, the latter is predictable on the basis of full knowledge of the immediately preceding state (SCHON, 1963/1969: p.145).

Employing the metaphor of the machine in social theorising entails acceptance, to a greater or lesser extent, of the assumption that if adequate knowledge of some present state of affairs is available it will be possible, in principle, to predict what individuals, firms, institutions will do. This assumption of strict determinism in human conduct seems to have lost the support it enjoyed in earlier social studies having been subjected to damaging criticism. Although it has been replaced by newer approaches involving stochastic

conceptions of human behaviour, the essential principle of mechanical determination has remained much the same.

Deterministic mechanisms are subject to physical laws which do not admit activity of thought -- in the sense of free, non-determined by laws thought. Their use as the basis for analogies in theorising about thinking organisms raises considerations of freedom of the will against determinism. Although machines cannot be said to have"free will", it may be contended that they could be made to act in terms of some degree of unpredictability. Such statistical rather than strict physical determinism could be said to provide a model of some degree of freedom in the performance of a mechanistic system, with certain built-in probability functions and relative randomness of operation. The development of probabilistic models of spatial interaction and location indicates an attempt to move away from strictly deterministic mechanistic systems and present a more realistic image of man as an individual with some degree of freedom in his activities. This "freedom" is expressed in terms of probability functions and randomness -- e.g. in models employing Monte-Carlo simulation techniques (CHAPIN, et al., 1965) or Markov processes (DREWETT, 1969) -- which may also be interpreted as "admission of considerable ignorance" regarding human conduct.

Secondly, a machine always performs some function; it is seen as an instrument, always the means and never the ends. Examples of useless or purposeless machines can indeed be found among the creations of modern artists such as Marcel Duchamp (1887-1968) or Paul Klee (1879-1940), but even these may be said to serve some "purpose" in terms of symbolically expressing and communicating

to the public their creator's attitude, say, against a predominantly technicist world outlook which neglects moral and cultural values. A machine does not select goals but operates towards attainment of some pre-selected goal(s). Only human individuals may be said to select goals. This may indicate the difference between free and non-free action, between conscious thought and mere performance. Machines cannot, but human beings can, be said to be moral or immoral; thay cannot <u>create</u> values as humans can, but may at best be instructed to discern among alternatives on the basis of some pre-chosen, built-in principle or norm of evaluation.

Such a principle frequently turns out to be "maximisation of benefits" or "minimisation of costs" -- benefits and costs reflecting in money terms the utilities and disutilities accruing to individuals or groups of individuals from some chosen course of action. In this sense, it may be argued that certain widely used techniques of evaluation of alternative courses of action that are open to some public agency -- techniques such as cost/benefit analysis, cost/effectiveness analysis, threshold analysis, the planning balance sheet, etc.-- have been developed within a predominantly mechanistic world outlook. Such techniques take utilities and disutilities expressed as benefits and costs to be clearly additive and cumulative, and values and other so-called "intangibles" to be expressible in money terms. The assumed measurability of such "subjective" values and their conversion into "objective" facts by means of quantification enables the application of the market principle -- viz. excess of benefits over costs -- in order to direct public choices. The ideological affinity of the market concept to an atomistic, mechanistic, utilitarian world view has already been pointed out (STANLEY, 1972: p.299).

But are human beings totally free to do as they please or can it be claimed -- as it has been -- that their conduct is determined by a set of socially accepted norms (culture, values, roles, class structure) to which they are expected to conform at the penalty of social sanctions? (PARSONS, 1949); (PARSONS, 1951). Although it may not be reasonable to claim that human beings possess "total freedom", they are nonetheless capable of making mistakes, selecting the wrong alternatives, acting inappropriately in view of some situation. Machines only malfunction: they do not "make mistakes". A mechanicist social or ethical theory might extend the analogy of the mechanism to cover such cases as: human error, fallibility, ignorance, irrational conduct; behaviour which does not appear to conform to established norms; deviation from some given social blueprint or some ideological conception of the best urban environment; and the like. It would then take such states as instances of "malfunctioning" in the "social mechanism" (dysfunctions) requiring corrective action by means of some appropriate mixture of "social engineering".

Planning that is evoked in response to dysfunctions -- euphemistically: "problems" -- may be said to fall within this intellectual tradition. However, in the context of the rival doctrine of organicism, it could also be claimed that the "social organism" may fall into some pathological state requiring remedial treatment by means of planning, much like the treatment that is prescribed in medicine following diagnosis of pathological states of individual organisms.
In both cases the problem of establishing criteria for distinguishing the "normal" from the "pathological", the "function" from the "dysfunction", has to be faced. Whether or not there can be a value-neutral way of arriving at such clear-cut criteria is open to much

discussion and relates to the alleged distinction between ideological (or normative) and scientific approaches to the study of social problems.

Finally, there are certain other distinctive characteristics of the freedom of conscious organisms and human beings which may be said to be imperfectly captured by the mechanistic metaphor. These are: (1) the self-consciousness and self-identity of the human being which goes beyond the mere "objective" or brute existence of a behaving organism with no self-consciousness; (2) the human being's consciousness of other members of his species which involves considerations of communication and socialisation. In this context, it is argued that human societies are verbally or symbolically linked organisations; they are conscious users of language which enables production of social relations going beyond mere common action. Usual replies to such criticisms are: (i) that machines may be equipped so as to recognise themselves (self-recognition); and (ii) to recognise other machines of their kind.

But machines do not use a language to communicate and create <u>meaning</u>, they only operate on one. They do not socialise as conscious language-users; they are not capable to show the infinite adaptability to emerging social situations which is a distinguishing characteristic of self-conscious, free-thinking human individuals. Now, mechanicists might accept such strictures but they might reply that such limitations result from the extent of available knowledge. It cannot, in principle, be precluded that knowledge will not advance to a level which permits such aspects of the nature of human individuals to be taken into account in mechanistic systems.

Although this prospect may give rise to a host of moral issues, one cannot sensibly avoid at least entertaining such a possibility -- especially in the light of outstanding recent advances in the field of artificial intelligence and the theory of automata.

The emergence of cybernetics is highly significant in this context for it has initiated the search for theories about and construction of self-governing machines (automata). Development of feedback mechanisms has allowed a self-governing device to achieve and maintain some predetermined state. Further, development of programming techniques and languages has enabled such a device to solve a wide range of problems by following detailed sets of instructions. The outcome of these efforts has been to achieve machine analogues of both purposeful behaviour and reasoning. The latter are two of the characteristics that have traditionally been associated with the "essence" of the "mental" and the "spiritual". There are many researchers in this and associated fields who believe that it is possible to gain valuable insights into the question of "mind" being distinguished from "body", by pursuing analogically the exploration of the issues involved in the development of self-governing machines.

The advances in machine technology have been truly remarkable over the past ten years, and their results have not yet been assessed or fully exploited. Apart from their widely known computational function, machines have been constructed which can prove theorems (Turing machines), play games (chess-playing machines), translate into different languages, and even compose music and write poetry -- often performing better in these fields than the individuals who built them. Further, machines can now be developed so as to learn from

experience, adapt to new circumstances, or develop new problem-solving heuristics. The channelling of so much effort into this field is not of course without its critics who express doubts as to whether scientific research ought to take such direction. But this is an issue outside the scope of this dissertation though no less important.(151)

As a methodological corollary of philosophical nominalism (POPPER, 1957/1962 : p.132), methodological individualism is often associated -- though not invariably -- with issues which go beyond questions of method of inquiry of social phenomena into the fields of metaphysics, ethics, and politics (DRAY, 1967: p.53). Thus, in political economy the principle of methodological individualism is said to be associated with the liberal individualist tradition of Western democratic societies (BRODBECK, 1958: pp.1-22). The "laissez-faire" version of liberalism that it suggests takes "society" to be "simply a name for the products of contractual agreements between individual calculators of utility" (STANLEY, 1972: p.299). Beyond the economic role imputed to the mechanism of the market, its "laissez-faire" version suggests connections with a world view influenced by atomic events and individual human beings, mechanistic analogies, and utilitarianism. This still remains the main organising principle of the ideals of individual autonomy and freedom of choice.

Some social thinkers have even taken such ideals as social consequences of the principle of methodological individualism (HAYEK, 1952); (POPPER, 1957/1961). They have argued against "the threat" of collective, comprehensive, or holistic planning of societal affairs and have advocated "piecemeal social engineering". This is seen as a form of technologically oriented planning addressed to practical social problems and operating through small adjustments and readjustments

of arrangements in society in its attempts to provide solutions to clearly identified problems (POPPER, 1957/1961: pp.64-70). Planning is seen as an institutionalised process which tends to constrain the freedom of the individual and, consequently, its scope is proposed to be kept down to a minimum.

Comprehensive, holistic planning is said to be associated with the rival doctrine of methodological holism which claims that there may be properties of social aggregates and institutions which pertain solely to the whole rather than their individual constituent parts. The contrast between these two methodological doctrines, individualism versus holism, is coming to be recognised as increasingly unreal for in social theorising both individuals and wholes play their important roles (RYAN, 1970), much like a wood cannot be conceived of without individual trees or the structure of a building without its individual components and materials. The implications of the individualist position for the planning of social organisation at various administrative levels have been clearly indicated in the so-called strategy of disjointed incrementalism as developed in (BRAYBROOKE, and LINDBLOM, 1963); (LINDBLOM, 1965: ch.9); (LINDBLOM, 1968).

The approach of disjointed incrementalism dictates that planning should focus on aspects of unit-problems rather than on comprehensive, holistic ramifications of such problems for the societal totality within which they emerge. Public decisions taken in a piecemeal, incremental manner without comprehensive planning and coordination are assumed to be in the best interests of the democratic processes which guarantee maximum freedom for the individual in terms of autonomy and choice. Taking the public decision process to operate in a pluralistic disjointed mode, the planner may be seen to operate

in a decision framework which is only one among many others.

The contribution of the planner can only be partial since his knowledge can only be partial and can never extend so as to cover all conceivable aspects of some social whole. It focuses on specific aspects of the problem at hand which fall within his competence. The planner's aim is to arrive at a solution to some problem which is satisfactory and sufficient for the time being and for all practical purposes: he "satisfices" (SIMON, 1957) rather than seeks for "best" overall solutions, that is, proposals which take into account as many as possible eventualities concerning the whole community. He is problem-motivated rather than embarked on some grand project to reshape the whole of society according to some utopian vision of a "best" end-state. He acknowledges that such an approach may require him to attack the same problem again and again but is prepared to do so.

The proponents of the disjointed incrementalist strategy of planning adduce in its support the evidence from the actual state of affairs in the process of making public decisions. The character of current policy-making processes is seen as incremental, disjointed, discontinuous, lacking some guiding conception of how the whole society should be, taking place within a fragmented and decentralised structure (RONDINELLI, 1975: p.54). This is said to provide sufficient empirical grounds on which to suggest that the style of planning advanced by disjointed incrementalism conforms to the actual state of affairs: to what takes place in government and the administrative and political machinery. Such evidence may even be taken to justify the incrementalist strategy.

One line of argument against such reasoning might be that this approach entails a normative view of how things "ought to be done" on the basis of how things "are being done", without venturing into an examination of whether or not "things as they are" could be made better. It may be said that it takes the satisfactoriness of the "status quo" -- of "what is" -- as given and recommends "more of the same". The role of planning tends to be delegated from its initial position as an activity creative of the future to one employed to maintain and perpetuate the present. Such a view of disjointed incrementalism might be associated with the political "luggage" of conservatism: indeed this characterisation follows naturally in this line of criticism.

It would not be too contentious to look for the roots of incrementalist thinking in Comtean positivism. Comte's programme sought to integrate and harmonise the "order" and "progress" notions of society under a structural-functional conception of social organisation where "order" reigned supreme. In this view, the science of society becomes one of justification of the "status quo": it is guided by certain subjective or societal "interests of cognition" (HABERMAS, 1968/1971: ch.9) which direct the way of looking at society, and hence social theorising, toward the perspective of "order" -- maintenance of social reality as it exists. This is said to be pursued at the expense of the perspective of "progress", viz. the investigation of social potentiality, the seeing of empirical social reality through the lenses of the possible and the normative: in terms of what could be or ought to be rather than what already is (STRASSER, 1976: pp. 5-6).(152)

If it is accepted that both the normative universe of values and norms and the explanatory universe of the social "things as they are" are created by man -- the former wholly and the latter at least partly so -- then neither may be said to be a statement about reality and neither can thus be strictly deducible from observation. Hence the attempt to justify the incrementalist model by adducing empirical evidence relating to what actually happens in the course of planning of societal arrangements should be abandoned as impossible. What may be more acceptable is the articulation of arguments advanced from some explicitly stated normative point of view which render such an interest-loaded formulation open to social criticism. For the divide between factual and normative issues may be misconstrued equally easily either by mistaking the meaning of "facts" or by distorting the meaning of "norms" and "values" -- though the integrated factual and normative questions may be analysed independently for discussion purposes. Thus, one might argue in support of the disjointed incrementalist approach by contending, for instance, that policies should not be "framed for and on behalf of the population as a whole by an elitist political and technical hierarchy" but should instead be developed "from the grass roots rather than lead from above" (CHERRY, 1974: p.80); or by making some other interest-guided statement in favour of that approach while, at the same time, stating explicitly the particular set of interests that guide one to make such a statement.

The preceding discussion raises a number of important questions. First whether there are any identifiable links and interdependencies between an epistemological and methodological outlook and the view taken of society and its political arrangements, including the style of planning that is seen as most compatible with such a view.

This problem is explored in a later section of this thesis. Secondly, the expectation that the social and natural sciences will reach a level of integration of a unified science where there will not be any significant distinction between the subject matters and methods employed in these two realms is an assumption which underlies much research for prediction and forecasting in social/ spatial analysis and planning.

However, this assumption is not to be taken for granted and may be unwarranted to accept as a whole package without important qualifications. There may be some validity in such claims of methodological naturalism. Nonetheless, there may be major points of difference regarding the constitution of human individuals, viz. the "model of man" that is to be accepted and to guide the search for predictive instruments. Purposive behaviour is the characteristic of human individuals which is not to be found among the features of inanimate nature. Evidently, man could be studied -- and has been studied -- mechanistically; but who studies him? Those other men, the scientists, who conduct the enquiry do not themselves operate on mechanistic principles (ENGEL, et al.,1975: pp.35-36).

Thus, scientists who study human behaviour mechanistically; or planners who seek to predict, say, what locations individuals, households and firms will select, based on mechanistic principles, cannot escape from applying the same principles to themselves. They cannot maintain that the two pounds' (£2) worth of chemicals which make up their bodies <u>and</u> their minds is not all that there is to account for observable behaviour of both subjects and investigators. But how can they account for their own behaviour if they do not introduce

notions such as purpose, interaction, motive, conflict, etc. into their inquiries? Although such notions may be alien in the context of mechanicism they are conceptually indispensable in any scientific investigation of human conduct and exercise in prediction of social/ spatial phenomena. The difficulty here is that considerations of purpose and purposive conduct cannot be accommodated within a mechanistic framework which stresses prediction from past occurrences. For purpose refers to the future and hence predictions which account for purposive action have to be made from the future rather than the past. This important issue of mechanism versus teleology still remains unresolved, if there can be a solution to it, both in philosophy (RESCHER, 1970) and the social sciences, though in the latter realm the work of the so-called "new teleologists" has produced some valid results (LOUCH, 1966), (TAYLOR, 1964).

3.2 "Incommensurability" of paradigms and interdisciplinary research: multidisciplines and some "interdisciplines".

The above brief review of some perspectives or research traditions in studies of social/spatial organisation has indicated, firstly, that theoretical developments and model building in the realm of urban spatial structure has been actively pursued by several social science disciplines, either individually or collectively, which shared a common interest in urban affairs. Secondly, it has suggested that these traditions focus on their particular range of interests in accounting for, more or less, the same set of phenomena. In so doing they tend to view what they take as their subject matter from a particular perspective which is characteristic of their approach.
These perspectives cannot be said to be mutually exclusive, in the sense of pertaining to different universes of discourse which are incommensurable between one another.(153) What makes sense in one approach is not totally out of context in another. This is because these traditions of research tend to share a number of organising principles.

For instance,"social physics" places emphasis on distance considerations in spatial interaction and implies that people will tend to behave so as to minimise their costs of travel, say, to work. Hence it is not dissimilar to location theory which also presupposes the "ideal type" of a"rational economic man". Further, ecological theories of the city lean heavily on the notion of competition which may be seen as an analogue of the market mechanism that underlies most location

models. Moreover, they share a set of ontological, epistemological and methodological presuppositions and are thus able to establish conceptual links with one another. This is not to deny that disciplinary perspectives have associated with them some way of looking at the world which is peculiar to them. This tends to give rise to problems of language, communication and commensurability of perspectives in investigations of some subject matter, which require contributions from more than one discipline. The nature of the subject matter of urban planning is such that involves many disciplines in its research and policy formulation activities.

The planner who would be an expert in all relevant areas of knowledge contributing to a planning study must be a very rare species indeed. It is said that Max Weber was the last social scientist to "know everything". Since his time knowledge has been accumulating at such a pace that it is inconceivable that a single individual would be capable to absorb it even in relation to a relatively restricted field of application such as planning. Recognition of the need for several disciplinary contributions to planning studies came early enough in the history of the profession.(154) Apart from any other considerations, the orientation of planners towards all-encompassing, comprehensive, holistic approaches to their plans called for extensive knowledge which was unlikely to be found in planning itself and would have to originate from disciplines whose subject matter was akin to the city and its various aspects.

Multidisciplinary research emerged as the first response to the need for a new structuring of scientific and technological effort in the inter-war period, which became apparent as the problems to which the sciences addressed themselves seemed increasingly complex and

multi-faceted (ACKOFF, 1973: p.669). The investigation of problem complexes by multidisciplinary teams involved decomposition into unidisciplinary and uniprofessional aspects that were considered to be amenable to solution independently of each other. Disciplinary solutions were subsequently aggregated to provide total answers. This method of approach was the natural derivative of an analytical way of thinking about the world(155) which was predominant until the 1940s and was founded on the assumption that the solution to the whole was the sum of the solutions to its independent parts. But this assumption is warranted only if the parts are genuinely independent.

The intellectual framework that began emerging by the early 1940s, what has come to be known as"systems thinking",(156) intensified the search for holistic approaches to the solution of general classes of complex problems. Based on the understanding that all objects and events, and all experiences of these, are parts of larger wholes the doctrine of so-called "expansionism" was adopted and pursued to supplement the reductionist approach. This principle implied concentration on the study of wholes rather than their constituent parts, though without denying the existence of the latter. "Expansionism" represented a "synthetic" mode of thought focusing attention upon a whole with interrelated parts: a system.(157) In synthetic thinking the explanandum -- or what is to be explained -- is viewed as part of a larger whole and is investigated in terms of its function in that larger system. Conventionally called the "systems approach", synthetic or holistic thinking is founded on the observation that optimum performance of each element of a system does not necessarily imply optimum performance of the whole.(158)

Under the influence of this way of looking at the world it was realised that multidisciplinary approaches to the study of the whole were not the best obtainable. Each of the disciplines involved in the investigation of a phenomenon might make a significant contribution. However, few of the problems that arose could be handled within any one discipline. The systems that were being studied were not simply mechanical, chemical, social, economic, spatial, biological or political. This classification represented only different prespectives of viewing these entities. Understanding of the systems was taken to involve the integration of the different disciplinary viewpoints; their synthesis during the process of investigation rather than the aggregation of the results from independently conducted unidisciplinary studies after the end of the investigation (ACKOFF, 1969: p.342). Interdisciplinary studies undertook to perform exactly that: that is, to treat the subject system as a whole by fusion of disciplinary efforts.

Interdisciplinary relations were not only a common exploration of the boundaries of knowledge nor only a tool for facilitating work touching upon the interest of many fields. Their true object was "to reshape or reorganise the fields of knowledge by means of exchanges which are in fact constructive recombinations" (PIAGET, 1973: p.66). One of the most striking features of the scientific movements of recent years is the impetus generated by interdisciplinary studies towards the formation of new branches of knowledge born from the union of neighbouring fields. Such "interdisciplines" -- operations research, policy sciences, management sciences, organisational sciences, "planning sciences", general systems research -- adopted new goals that had an impact upon their parent disciplines and which may be said to have enriched the latter.

Several disciplines have been instrumental in transforming urban planning from its emergence as an area of professional practice into a field of knowledge which is evolving towards acquiring the status of an "interdiscipline". Apart from the founding professional groups, such as architects and engineers, the trend to multidisciplinary work attracted to planning those disciplines whose interest lay with the problems of social and spatial organisation, in general. Sociology was one of the first disciplines whose members expressed concern over the difficulties that were being faced by the planning profession (159) as well as over the problems for society created by the planners in their attempts to reshape the urban environment according to their ideals.

Negative criticisms of the concept of comprehensive social planning at national and local levels were strongly expressed by many sociologists. Planning in a democratic political/administrative context was attacked as pseudo-scientific or as "scientistic" delusion stemming from Comtean positivism; which in turn was seen as originating from the Ecole Polytechnique of Paris. The desire to apply purely engineering techniques to the solution of social problems was regarded as a dangerous aberration and as being alien to the fundamental principles of liberal democratic regimes (von HAYEK, et al., 1935: p.210); (von HAYEK,1944); (von HAYEK, 1952:pp.94,105); (LIPPMANN, 1937: p.365); (ZWEIG, 1942).

Description by Mannheim of liberalism as a transitional phase between two forms of "planned order" -- medieval Christendom, on the one side, and the new phase that was emerging from "the growth of a coherent and coordinated system of social techniques" within the modern state (MANNHEIM, 1935: pp.160; 362), on the other side -- attracted a host of criticisms.

They were especially expressed against Mannheim's tendency for "historicism" (i.e. the inevitable laws of historical development) and "holism" (i.e. that social reconstruction should be all-embracing); and started a controversy which lasted until the 1950s and, in retrospect, made the whole debate appear increasingly unrealistic. Emphatically opposing Manheim's views of planning, Popper advocated "piecemeal social engineering", in which social arrangements are changed by "small adjustments and readjustments" rather than by trying to redesign the whole society (POPPER, 1957/1961: pp.66; 68).

Economics had no formal involvement in urban planning until the late 1940s.(160) This was due to the fact that the concept of space was introduced relatively late in the process of evolution of modern economic theory (FRIEDMANN and ALONSO, 1964: p.17). Moreover, the main interest of theoretical economics did not lie with issues that were directly relevant in the urban planning context. For example, emphasis on economic rather than social objectives; concentration of attention on the private as opposed to the public sector of economic activities (although the latter permeates planning in the forms of social overhead and infrastructure investment); inability to reach conclusions on objective measurements of interpersonal comparisons of utility (that is, to establish with some degree of certainty the extent to which social groups would be better or worse off as a result of changes proposed in a plan); all these represented gaps in economic theory on matters which were of great importance in urban planning (FAMELIS, 1970: p.8).

However, problems created by the need to finance the implementation of planning programmes generated the requirements for sound economic advice and the active implication of economists in town planning operations. Further, realisation that the way in which economic activity

is distributed spatially has a significant bearing on the development issues of urban and regional economies; and the fact that town planners' proposals of extensive reorganisation of the existing patterns of urban land uses were made on the basis of criteria other than economic, gave rise to increased concern among economists over the repercussions that indiscriminate action on urban economies might have for their survival. Thus, a number of prominent economists were attracted to the study of the economic aspects of urban planning, in particular, and to the research of the basic theoretical principles governing the functioning of urban economies (LICHFIELD, 1956); (PFOUTS, 1960); (PERLOFF and WINGO, 1968); (LEAN, 1969); (RICHARDSON, 1971); (LEAN and GOODALL, 1970); (McKEAN, 1973).

The emphasis placed in recent decades upon the social science aspects of geography produced a strong interest among the professionals of that discipline in connection with the philosophy and methods of investigation of man and society in geographical space (HARVEY, 1969). Geographers have been increasingly concerned with the patterns of localisation of man, his structures, societies and cultures; with the interrelations between these and the physical environment: in short, with spatial patterns. Variations in the social environment between and within cities and urban areas -- being viewed as a subset of the set of all such variations in physical space -- and the process of adaptation to and modification of these environments to suit specific human needs -- being the process of spatial planning -- have been of direct concern to the geographer. Both the study of the roles of planning and professional participation in it are claimed to be within his scope of activities.

Political and administrative issues abound in urban planning. This is manifested in the need for coordination of community choices, for

adapting means to ends for bridging the gap between the formulation of policy and its implementation: the passage from the empirical "is" to the normative "ought". Further, the problems that are generated by different elements of urban administration at various hierarchical scales; and the requirements for integration of policy making at all relevant administrative levels provide ample opportunity for active involvement of political scientists and public administration specialists in the interdisciplinary planning team (GALLOWAY, 1941); (MILLET, 1947); (DALLAND, 1967).

The model interdisciplinary planning team comprising a number of specialists in relevant fields, presumably ready to cooperate and integrate their disciplinary points of view, seems to represent an ideal which has seldom been attained in actual planning practice. Although the rationale for interdisciplinary approaches to the tasks of urban planning is basically sound, many issues regarding the functioning of interdisciplinary planning teams still remain problematic. Some of the problems that arise in such undertakings are well reviewed in (ALONSO, 1971: pp.169-173). More specifically, there seems to be an inability to arrive at integrated interdisciplinary approaches because of emphasis placed on individual disciplinary perspectives. Moreover, semantic problems of communication between professionals of different disciplinary backgrounds often prove overwhelming. Increasing intra-disciplinary specialisation renders exceedingly difficult the selection of professionals from various disciplines, whose skills are best suited to the particular set of circumstances facing the interdisciplinary team. The techniques employed by various professionals belonging to different disciplines may be refined and"appropriately" scientific but their use may prove problematic within the broader

framework of a methodology specifically formulated with the social context of planned action in mind.

To advocate, as Alonso does (ibid.: p.171), " that urban and regional problems and plans be attacked by one or more professionals who are first and foremost scholars in urban and regional problems and secondarily members of traditional disciplines", is indeed a plausible alternative to what has so far been the case. But it will not be a viable one, too unless a range of fundamental problems of planning begin to receive attention. Such problems would involve the question of the disciplinary status of the field -- art, science, ideology, something else ? -- its epistemological and methodological foundations; its approach to issues of "practice" -- in the sense of the Aristotelian "πρακτική ", viz. practical reason, pertaining to the realm of ideology and politics; in short, they would be problems of paradigm formation rather than paradigm change à la Kuhn. They would be questions of problem generation and definition rather than "degenerated problemshifts" à la Lakatos.

However suspicious one is of such questions regarding the cognitive foundations of a field which is well-known for its emphasis on the pragmatic and the feasible rather than the contemplative and the scientific, there is no way of avoiding the conclusion that it is preferable to seek to know before acting, that informed action stands a higher chance of yielding "pragmatic" results than a mere guess. If this is accepted, then the ways in which knowledge is acquired and legitimated in urban planning -- rather than made use of -- should be subject to investigation and discussion and not taken for granted. This also means that models and the model building activity,

appropriately viewed as elements of man's cognitive apparatus rather than as merely special techniques performing restricted functions of prediction and testing of action hypotheses; as vehicles of thought rather than simply instruments or tools which somehow miraculously accomplish their forecasting tasks; should be investigated with regard to their epistemological foundations. But this need not imply a state of extreme integration of different viewpoints resulting in a solidified and fixed view of the world, a closed system of thought which is to govern inquiry forever.

There should exist areas of constructive argument which would initiate changes in perception and conceptualisation should the critique of existing modes be accepted. There are many similarities between political conflict and theoretical disagreement and many gradations to the latter. Calls for interdisciplinarity should be heeded to, but cautiously; for the demands for interdisciplinary integration in planning should not overwhelm the need for critical discussion and assessment of different theoretical perspectives. There is a sense of unconstrained optimism associated with interdisciplinary research which tends to overlook important realities in inquiry. Although interdisciplinary approaches are successful in softening entrenched disciplinary viewpoints, they should not be aimed at eliminating them completely. Convergence more or less partial of insights should be regarded as a satisfactory outcome of interdisciplinary exercises. Development of enlarged perspectives without sacrificing what has been accomplished at a more limited disciplinary basis, should be a prescription for such exercises. It is by convergence and fusion of theoretical viewpoints that new perspectives are to be created from which to approach already

familiar material and seek richer formulations. Fragmentary insights cannot be expected to inevitably add up to some integrated whole. Methods and procedures of other disciplines cannot be taken for granted. The epistemological problems that alternative disciplinary perspectives raise and their range of assumptions concerning the nature of reality will first have to be investigated and reconciled.

3.3 The movement towards comprehensiveness in conventional physical planning approaches.

Recognition that planning could not sensibly restrict its concerns to the purely physical aspects of the urban environment -- such as aesthetics, health and sanitation, orderly movement of persons, goods and vehicles -- and neglect influences arising from a combination of environmental, socio-cultural, economic, and political factors in interaction came early enough. Thus, in (MUMFORD, 1937: pp.vii-viii) it is stated that:

"Planning involves the job of coordinating specialisms, focusing them in common fields of knowledge, and canalizing them in appropriate channels of common action ... We must learn to deal not with specialised interests and atomic elements, but with elements in association and generalised interests; we must deal with organism, function, and environment, with place, work and people, with political, economic, cultural and aesthetic life ... "

Further, one of the important members of the founding generation of

urban planners in the USA expressed the view that "...city planning is not and probably will never be the field of a single profession .." (LEWIS, 1939: p.7).

The evolutionary trajectory of urban planning in terms of the degree of comprehensiveness in its approach can be traced in steps from (i) an early stress on aesthetics to (ii) the goal of efficient functioning of the city -- in both engineering and economic sense; then to (iii) assuming the role of a set of means for controlling the use of land; subsequently, to (iv) being a key element in efficient governmental procedures; later to (v) involving welfare considerations and stressing the human element; and more recently to (vi) encompassing many socio-economic and political as well as physical elements that help to guide the functioning and development of the urban community (GOODMAN and FREUND, 1968).

However, early comprehensive land use planning attracted a host of criticisms which tended to reject its conception of some holistic end-state, a master or general plan, as a static normative model holding together the principal planning norms and activities. The critique of the comprehensive mode of planning resulted in two important modifications: (i) the notion of an end-state plan was abandoned in favour of the plan as a <u>continuing process;</u> (ii) the planning process was viewed as independent of the object of planning, and this orientation resulted in conceiving of planning as a process of <u>rational decision making</u>.[161] The expanding subject matter of planning imposed requirements of knowledge and methods and procedures for its acquisition and application to practical issues, which were taken to be best met by exploring the methodological apparatus of neighbouring

fields. Thus planners reached outwards beyond their own restricted boundaries imposed by such antecedents as architecture and basic civil engineering.

In its search for a concomitant methodology to replace and/or supplement traditional approaches, urban planning has been turning to both other planning milieus (e.g. transportation, industry, business management, even defense); and to fields and disciplines which, although they had developed an interest in spatial analysis, had been previously ignored (e.g. economics, systems engineering, operations research). The interaction that emerged from this search for concepts, formal methods, and approaches to solutions of problems that might be applicable to urban studies further enhanced the trends towards a re-orientation of urban planning. This was mainly due to the recognition that (ROBINSON, 1972):

"... planing is basically a methodology, a set of procedures applicable to a variety of activities aimed at achieving selected goals by the systematic application of resources in programmed quantities and time sequences designed to alter the projected trends and redirect them toward established objectives. In short it has become increasingly recognised that urban planning is but one branch of a family of disciplines and activities which plan and use planning methods, e.g. administration, management, budgeting, engineering, and systems analysis".

This view takes planning to be independent of the object, or subject matter, that is being planned and places emphasis on the knowledge end of the "knowledge/action" continuum which constitutes the context of urban planning (FRIEDMANN and HUDSON, 1974). In this manner, planning

is seen as a process of rational programming or rational decision making; and this view has been offered as an alternative to the earlier normative conception of urban planning as "comprehensive land use planning". The separation of the planning process from that which forms the object of the process, or -- to put it in another way -- the conception of planning as a generic activity rather than one which differs fundamentally in relation to context of application, has been instrumental in intensifying the process of borrowing by urban planners of methods and techniques from other areas where planning of some sort or another is carried out (such as management or operations planning). Moreover, it has attracted into the field of spatial analysis and urban planning many individuals who were originally skilled in planning studies in contexts other than the city.

However selective and partial such borrowing and adaptation may have been, it has drastically affected traditional planning methods and has resulted in the introduction into the urban planners' toolkit of a number of often "exotic" and esoteric techniques that had been developed with other fields of application in mind. It has been observed, in retrospect, that such extensive enrichment and restructuring of the methodological and conceptual material of urban planning has been advancing at a pace that appears to be much faster than the ability of the professionals of the field to assimilate the new information and put it to advantageous use. However, the ongoing modification of academic curricula in schools of planning which is specifically introduced to take account of the inflow of recent developments and to transmit this knowledge to new generations of urban planners is bound to result in an ever widening dissemination of the new approaches and in their gradual absorption into the body

of theoretical and procedural material of urban planning. Whether or not this is the appropriate direction for planning is open to debate which must involve considerations of the extent to which the subject matter of inquiry is allowed to determine the methods that are employed in its study. This issue will be discussed later.

C H A P T E R T H R E E

The normative dimension of planning.

C H A P T E R T H R E E

The normative dimension of planning.

1. Introduction: The changing social and technological context of urban planning.

2. Social criticisms of the early planning "models".

3. The shifting realities of society and technology.

4. The ideological elements of urban planning.

5. Technicism, humanism and problem-solving: is a fusion of perspectives possible ?

Footnotes to chapter three.

1. Introduction : The changing social and technological context of urban planning.

The early conceptions of planning and its process represented genuine attempts at eradicating the problems of the cities and making the urban environment as attractive a place to live and work as was possible given limitations in resources and constraints imposed by existing physical and social structures. This commitment to improvement and reforms that would further the interests of the community as a whole was singled out for criticism from two sides: (i) For not being sufficiently "objective", i.e. for being the result of normative choice, based on some vision of the future, which was not founded on solid empirical bases of scientific and value-free analyses of existing states of affairs and exploration of the consequences of alternative proposals for the city as a whole. (ii) For being too "subjective" in its conception of some end-state of the city regarded as the "best" possible and consistently pursued. This approach was seen as paternalistic and ineffective in creating the kind of urban environment

that would be acceptable to those who would inhabit it rather than those who designed it. Thus, according to the former critics, it was not clearly shown how the passage from the empirical "is" to the normative "ought" was to be made in a way which effectively met stated social goals, and objectives. This led to the conception of planning as rational programming. According to the latter criticisms, it was the goals themselves, their derivation and explicit formulation usually outside of the segments of society concerned, that was at the root of the difficulties. This led to calls for increased public participation and the viewing of planning as a social process.

But apart from "inside" criticisms planning was faced with pervasive changes in its subject matter to the extent that where simple design exercises might earlier prove appropriate in well-defined problems, they were proving wholly inadequate in the rapidly shifting social and technological realities of post-war urban societies. The problems that gave rise to the recognition that some form of control and planning of the urban environment was required if cities were to continue to provide a livable milieu for human productive and social activities, were problems that could be circumscribed with relative clarity and precision and involved simple commonsense to identify. Congested urban centres; poor housing; a network of roads which could not cope with rapidly increasing vehicular traffic; the explosion of the motor car and the resulting enhanced mobility of the urban population; these were some of the problems that were taken to be solvable by applying sensible standards of environmental design and by arriving at concrete and detailed schemes of action in terms of control and renovation by means of intuitive consideration of the possible, the ideal, and acceptable compromises.

No direct "tampering" with societal processes was anticipated; only physical, environmental measures were taken to be necessary and sufficient in producing the requisite social harmony and improved environment. That environment determines behaviour was a view implicit in such physical determinist solutions to the problems of the city. However, recognition that physical manifestations of urban problems were actual products of societal processes, structures, and mechanisms which were not fixed physical "things" but changing over time in a way which rendered the formulation of "natural" laws of society a futile exercise in the long run,necessitated a change in emphasis placed by early planning on the purely physical dimension so as to incorporate and account for social aspects of its subject matter. This state of affairs also contributed greatly in the reconsideration of early planning approaches and the search for new methods and procedures.

2. Social criticisms of the early planning "models".

The critics of early planning approaches focused on the two sets of points that were referred to above. These were not "global assessments" of what planning had so far achieved but rather critiques from some particular points of view. For instance, to claim that planning was not carried out based on sufficiently "objective " analyses of existing states of affairs and predictions of the consequences of alternative action schemes on these, presupposes that "objective" planning modelled

on some conception of a "policy science" would be far superior to more intuitive or subjective approaches. But this is a view which can not be scientifically (empirically) established for it is based on prior assumptions of the nature and potential contributions of science[1] which cannot be tested in experience. Moreover, there are many plausible arguments which cast doubts on the possibility to directly apply methods and procedures of natural science to the study of social problems.

Similarly, to argue that early planning approaches were not sufficiently concerned with interpreting the wishes of human individuals in the formulation of goals and objectives implies that had they done so they would have proved successful. Again this is a claim which is difficult to test in experience for it expresses some particular normative viewpoint- viz. that the individual is more important than the collectivity in questions of social policy. The experience of several abortive exercises of public participation and goal formulation by consensus has shown that the otherwise honourable objective of "asking the people" is very difficult to attain in a way which produces concrete and usable results for planning. Of course, this may be due to the approach adopted in communicating with the public and arriving at definitions of so-called "public interest". But the difficulties in clearly delimiting such concepts should not be underestimated, as is shown below.

Apart from the particular interests guiding the critics of early planning, it has to be conceded that there are many plausible arguments in these critiques. Further, the ideological content of urban planning clearly differentiates it from other social science disciplines.

In the theoretical formulations of the latter it is comparatively easy to exclude "extraneous" influences and suppress contradictions by employing simplifying assumptions such as 'ceteris paribus' -- i.e. other things being equal -- or employ some form of the "conventionalist stratagem" (2) to save some empirical hypothesis from refutation. In contrast, in the field of concrete and real problems that planning is required to solve the flaws in the conception of the urban environment implied by the proposed solutions cannot be evaded. The pragmatic justification of the results of planning is its hardest test against experience.

Starting from the physical dimension, the cities that have been subjected to active planning and control of development were affected physically in various degrees ranging from localised changes to total metamorphoses -- depending on the effectiveness of the supporting planning legislation and the radicality of the planners' approaches. Extensive urban renewal, land use controls, and new transportation systems are only few of the powerful instruments of change in the hands of urban planners, which were used with great consequences for the existing fabric of urban areas. Further, a whole constellation of new towns were developed following the ideologies of the early "utopians" of planning as these were subsequently supplemented by contemporary locational economic thinking.(3)

Therefore, judging from the magnitude of purely physical change which took place during the period under examination it may be argued that planning (in certain parts of the world) has been largely effective in influencing physical conditions and bringing about structural changes in the city. Cities, however, are essentially socio-spatial

entities : any change that affects their physical space will ultimately have repercussions for their social content. It is in this latter area that early urban planning "models" are claimed to have had certain monumental failures. Thus, it is argued that it has proved extremely difficult to maintain either of the two fundamental assumptions of those approaches. On the one hand, "collective interest" proved impossible to identify objectively -- apart from cases where strategic or economic factors were exceedingly predominant. Most frequently, conceptions of public interest involved either approximations based on the planners' ingenuity to devise arguments founded on the concept of "amenity", the "sense of community", the "requirements of good planning", etc. (HARRISON, 1972: pp.267-269); or included suggestions that present planning policies are justified on the grounds of the future "common good" of posterity (DENNIS, 1970: pp.337-342). A notable example is one of planning's proudest and most dramatic in its effect achievements: slum clearance; with the well documented side-effects on the social structure and cohesiveness of the pre-existing communities and the alienation of the latter from the new, standardised, idealised environments that were provided them as substitutes. It is claimed that this treatment of individual requirements in total abstraction from social context may be regarded as an empirical refutation of the assumption concerning an objectively identifiable communal interest (ABRAMS, 1965); (ANDERSON, 1964); (FRIED, 1963); (GANS, 1962); (GREER, 1965); (HARTMAN, 1964).

On the other hand, the pragmatic rebuttal of the hypothesis that planners were privileged in having the means to identify the "public interest" -- in whose name they were acting -- manifested itself

through the refusal of the affected parties to recognise the experts' definition of social imperatives transcending whatever the local residents or businessmen considered to be their interests (DENNIS, 1970). In Britain, general opposition tothe implementation of urban planning proposals has augmented considerably since 1947. The profession was not prepared for the masses of planning appeals of the 1950s (LITTLEWOOD, 1957).

The impending crisis in the urban planning scene of the early 1960s initiated some fresh thinking among the professionals and the theorists of the field. Placing faith in the treasury of the social sciences, new methodological approaches were propounded to overcome existing problems of planning. The first attack on the eminent weaknesses was concentrated upon the ways of identifying the concept of "communal interest". Objectivity and rationality in this operation were sought through the adoption of a methodology already developed within those disciplines which specialised in the study of the optimisation of the performance of functional systems, such as military or industrial operations. Physical deterministic approaches were thus being succeeded by a broader systems view of the cities which replaced the early planning "models". This indicates that the attempts to modify and improve the comprehensive land use planning "model" were not thought either to go far enough in changing that "model" or to produce a really improved version of it.(4)

Taking society as a cohesive collective the systems approach met requirements of interdependence of factors influencing urban growth, and of comprehensiveness in dealing with urban problems. It abandoned causal analysis in favour of understanding interdependencies in

the functioning of the urban system as a whole. It further provided a sufficiently explicit and readily available theoretical background on which to speculate about the behaviour of such systems and derive fruitful hypotheses. (5) Finally, it rendered accessible to planners a set of procedures and methods under the general heading of "systems analysis" (6) which were being developed and used in the study of operations and in the solution of clearly defined problems of systems (HITCH, 1955: p.1), (QUADE, 1966: p.28). These methods were applied to fields such as operations research (BRANCH, 1957), (WHEATON, 1963), decision theory (DYCKMAN, 1961), input-output studies (ISARD et al., 1960), information theory (MEIER, 1962), as well as sociological and manpower analyses for understanding the behaviour, attitudes and ends of the people that were affected by planning (WILMOTT and COONEY, 1963), (REINER, et al., 1963).

The systems framework was an added incentive for urban planners to adopt a conception of planning as "rational programming". The other strong influence was, of course, the emergence of the so-called policy sciences which employed a technological approach to the solution of social problems (NAGEL, 1975), (LERNER and LASSWELL, 1951) and operated on the assumption that explanation, i.e. knowledge (preferably scientifically acquired), ought to precede prescription, i.e. action. (7) Planning modelled on "rational programming" was taken to deal with the objective choice of social ends and the scientific/analytical determination of the most effective means to achieve those ends. Selection of means-arrangements would be effected also objectively by employing rational criteria of optimising the use of scarce resources-- criteria of efficiency, mostly -- so as to eliminate undesirable consequences that might ensue from implementation of the means.

As regards the ends of planning, these were either taken as supplied from outside of the rational programming exercise, say, by the administrators, politicians, etc., or arrived at objectively by avoiding ideological influences and 'a priori' determinations of the "public interest". Objectivity in defining community goals was taken to be attainable by recourse to and dispassionate, detached study of market and political processes and the feedback from those affected by proposed planned action. Moreover, the means and their consequences were determined through mainly empirical analyses and a variety of studies testing the fit of means to ends and predicting the consequences of these means (MEYERSON and BANFIELD, 1955); (MEYERSON, 1956); (DAVIDOFF and REINER, 1962); (PERLOFF and WINGO,1962).

The influence of the "rational programming" framework brought urban planning increasingly closer to concepts and methods of rational decision making that were being developed in other disciplines and so reduced the differences between planning for a variety of clients and ends, on the one side, and planning for urban settlements, on the other side. In terms of theoretical orientation, research findings within the "rational programming" framework indicated that the aspects of the physical environment which urban planners have traditionally dealt with do not have a significant impact on people's behaviour (ROSOW, 1961); (WILNER et al., 1962). Further, studies of social organistion and social structure succeeded in amply demonstrating that economic and social patterns were much more important elements of the urban system than spatial ones, (8) although their examination and study in abstraction from their spatial context would be counter-productive. The insights gained through such studies contradicted earlier physical deterministic approaches in urban

planning and suggested that attention should be placed on urban institutions and institutional change rather than on environmental change alone (WEBBER, 1963); (WEBBER, 1964).

In conjunction, comprehensive or holistic planning and the ideal of rationality constitute the so-called rational-comprehensive mode of planning. This stresses the view of the city as a complex system of interrelated components or sub-systems; seeks to explore system-wide repercussions of proposed courses of action; takes a global view of the subject matter of planning; adopts rational/systemic methods in the study and control of urban affairs; requires central coordination and integration of action programmes of different public agencies; pursues overall or system goals (WEBBER, 1963). Evidently, the idea of comprehensiveness, if taken too far, is self-defeating for it is never possible to command the kind and amount of knowledge that is necessary to deal with the city seen as a whole. As Popper has so convincingly argued, a holistic approach (implying an extreme holistic view) faces the limitations of human knowledge.

If by a whole is meant "the totality of all the properties or aspects of a thing, especially of all the relations holding between its parts" (POPPER, 1957/1961: p.76), then wholes in this sense "can never be the object of any activity, scientific or not" (ibid.: p.77). A holistic approach is impossible for the study of society as a whole and so must be the holistic method of planning and controlling and reconstructing society as a whole (ibid.: p.79). Wholes in the above sense cannot be studied as wholes for study of anything always involves selection of some aspect of it: "all description is necessarily selective" (ibid.: p.77). However, comprehensive planning need not

take such an extreme view of wholes or systems that cities are said to be. All it needs maintain is that "certain special properties or aspects of a thing, namely those which make it appear as an organised structure rather than a 'mere heap' could be regarded as a whole" (POPPER, 1957/1961: p.76).

This view would imply that such things would be both more than the mere sum of their parts and amenable to selective study (ibid.: p.76). Moreover, adopting an atomistic or individualistic approach, in no way precludes recognition that every individual interacts with all others (ibid.: p.82). Hence what happens in practice is that the extreme holist is faced with the problem of knowing a whole and being unable to solve it he settles for a partial or abstractive approach (ibid.: pp.68-69). Analogous criticisms of comprehensive-rational approaches have been made by (BANFIELD, 1959) and (ALTSHULER, 1965). Comprehensive or holistic approaches may be said to be associated with organismic views of society while approaches based on incrementalism and "muddling/through" that are critical of comprehensive planning would be linked with atomistic or individualistic views of society (FALUDI, 1973[b]: p.113).

Thus arises one of the most widely discussed issues in planning -- but also in social philosophy though here the emphases are on epistemological issues -- regarding the mode of planning that is most appropriate given the nature of its subject matter, but also the methodological perspective to be adopted in developing models and theories of social/spatial phenomena. Thus, it is possible to distinguish two interconnected levels of discussion: (i) at the epistemological level, the issue arises from consideration of the methodological

approach to studying social/spatial phenomena, viz. whether it should be focused on individuals or on collectivities or wholes (e.g. systems); (ii) at the level of planning process (the level of action), the dispute involves comprehensive or holistic planning approaches, which emphasise interrelationships and collective goals, versus incrementalist or individualistic approaches of planning which stress partial, piecemeal, incremental measures and muddling through and exclude overriding global goals.

The well-known debate concerning individualism and holism as methodological doctrines in the study of social life extends, though not invariably, into many realms of human organisation -- e.g. politics, administration, sociology, economics, planning, operational research, and management science. At a general level of social philosophy, but often also in discussions of substantive issues within particular disciplines, the debate frequently carries over into ontological arguments about whether wholes such as societies and cultures can be said to really exist as entities in themselves even though they are constituted by individual human beings. The issues concerning the nature of society -- or collectivities such as social groups, organisations, and institutions -- and the relations between such social "wholes" and the human individual have occuppied the minds of many gifted scholars and thinkers since the time of Plato and Aristotle; and there exists as yet no definitive answer to those questions. Very roughly, three main sets of views have been stated in the context of the debate regarding the individual versus the social collectivity.(9)

Firstly, there are the holists who generally take collectivity as coming prior to the individual, or as having ontological status in itself, and as being the distinguishing characteristic of human beings: for in Plato's famous view, a man as a lone individual is not a man; he is either god or beast. Hence it is society and socialisation that turns an individual into a human being -- though not all holists share all of those views. Indeed, some appear to restrict their holism to merely objecting against the doctrinal rejection by individualists of the possibility of identifying properties that pertain solely to wholes (DRAY, 1967). Secondly, there are the individualists, who currently predominate, asserting that the individual and aggregations of individuals is all that is involved in the study of social life. Collectivities are simply made up of individuals and their properties can be investigated either by aggregating the properties of the individuals who constitute them or by reducing collective behaviour to that of individual agents -- though in this camp, too, there are wide variations in the precise content of the views that are held.

Finally, there are those who regard both collectivist and individualist considerations as indispensable in investigations of society and the social relations among its members (STARK, 1958). However, collectivist approaches to social phenomena may be conceived independently of the ontological issue concerning the <u>real</u> existence of collective entities. Human affairs are often investigated in terms of both <u>individual</u> questions relating to motives, intentions, reasons for action, as well as <u>collective</u> or "institutional" questions regarding concepts, forms of organisation, and patterns of behaviour seen in relation to each other (HANSON, 1975: Ch.1).

Especially as regards questions of social policy and planning at various levels of the administrative hierarchy, these generally pertain to the communal environment and address themselves to the provision and maintenance of "goods and services" to which the individual cannot have access in the market as a single individual. One might list, for instance: urban transportation in terms of both systems of rapid mass transport and the roads network of a city; the provision of shopping and leisure facilities in areas which the market regards as "unprofitable"; urban redevelopment schemes in city areas where housing conditions are assessed as below some acceptable lowest level; the control of environmental pollution (air, water, noise); etc. as examples of such goods and services that are not available to the single individual through the market mechanisms. Provision of these is said to instigate the need for government; and the need to coordinate decisions regarding the substantive, spatial, temporal, and magnitudinal characteristics of their provision indicates that "some form of planning" is appropriate.

Thus, due to the nature of its subject matter planning has to take into account predominantly collectivist aspects of the social affairs it deals with. Planning discourse has usually been articulated in terms of aggregates rather than individuals; in terms of relations between <u>wholes</u> and <u>parts</u> (e.g. between cities as social/spatial wholes or "systems" and the activity "subsystems" that may be said to constitute "urban systems"). This is not to deny that part to part or whole to whole relationships do not enter into planning deliberations. Questions concerning the ontological status of wholes or systems rarely arise in urban planning. Such questions might revolve around: (i) whether wholes or systems may be said to have

an existence of their own by virtue of their collective properties, such as "urban structure", "culture", or "collective interests", which cannot be derived from properties of individuals or reduced to these; or (ii) whether it is sufficient to establish appropriate rules of aggregation of individual characteristics in terms of which discourse about aggregates may proceed, thus rejecting the ascription of ontological status to wholes. Setting aside such ontological issues might be seen as enhancing rather than hindering progress in the field, particularly since it stresses pragmatic rather than contemplative criteria of knowledge and action.

As a result of the emphasis placed on collectivities and aggregates rather than individuals, planning is often said to be anti-humanistic and anti-individualist. This may be seen also in the tensions that are claimed to exist between the collective concept of "srtucture" -- whether it be "social structure" or "social/spatial structure" as in the notion of "urban structure" -- and the concept of the individual in society (CAWS, 1968/1970: pp.197-214). However, this is an evaluative statement expressing the view of some humanists that collective analyses fail to give primary importance to the dignity and interests of the individual. Since it has not been demonstrated that alternative approaches, to the extent that they are conceivable and applicable, possess distinct advantages and improved explanatory power the humanists' criticism may be either accepted or rejected as an act of faith or expression of preferences.

Further, to claim that planning is conceptually or inherently anti-individualist is to fail to recognise that it is invoked as a social process which, as part of social life, aims at furthering the interests

of the individual in society and attempts to make accessible to the individual certain goods and services which would otherwise be unavailable. Hence the charge of conceptual anti-individualism levelled against planning may not be very well founded. However, there is a distinct methodological emphasis on collective concepts and aspects of society in planning; and this may be said to provide reasons for arguing in favour of approaches which employ methods that ascribe to the individual a much more important role in the forming of policies and decisions concerning his way of life, privacy, independence, and freedom.

If an individual must engage in, say, regular physical exercise in the present in order to minimise the risk of coronary disease in the more distant future, it is unreasonable to deny that social groups would not be better off if they adopted now some form of systematic and thoughtful regulation of the affairs affecting their individual members in order to improve collective conditions in the future. Employing rational foresight to guide action now in view of potential future occurrences is the underlying rationale of the ctivity of planning. This is not to deny that adopting some form of planned regulation of collective affairs may be taken as a matter of <u>choice</u> rather than a condition that is necessarily imposed on society by the order of the things social.

The instigation of planning is not an empirical but rather a normative question. "Things as they are" are things as they are: they only become subject to regulation and control if they are not judged as satisfactory. However, leaving them as they are may not be characteristic of human beings as morally responsible agents, and such an argument may be taken to support the claim that planning

and regulation of social affairs can be empirically justified (on a descriptivist view of ethics). The main point here is , of course, that planning activity is itself a normative view of society; and not that society possesses intrincic mechanisms to ensure its "survival" or "progress" or "evolution" without requiring external intervention -- which is a view that is best rejected.

If it is agreed that there is scope for some form of planning and regulation of change in societal affairs which does not conflict, in principle, with basic individualist values, then the problem becomes one of specifying that form of planning in a way that it does not antagonise the individual in practice. Creating a set of arrangements in relevant areas of social life in order to assure that the interests of all individuals are appropriately served is a critical task for any form of planning of societal affairs. It does, however, share the predicament of all democratic processes in that it cannot satisfy the interests of all the individuals that are affected by planned action -- as attempts at defining the elusive notion of the "public interest" have shown.(10)

Efforts aimed at minimising the extent of dissatisfaction among individuals that is caused by implementation of proposed social policies are indeed laudable. However, they must be constrained in their effectiveness by the need to balance collective and individual interests without rendering excessively weak and inadequate the coordinative and controlling aspects of planning, and hence nullifying planning as a whole. The main difficulty here seems to lie in clearly delimiting the requisite centralism of coordination in planning policies so as to enhance their beneficial effects, while

at the same time avoiding conditions leading to excessive concentration of power and responsibilities for producing the planned results by explicit coercion exercised upon individuals.

Some degree of central coordination of various action policies proposed with respect to different aspects of social/spatial organisation seems to be appropriate, despite objections from individualists. The scale at which intervention takes place, the scope of the resources that are involved in implementing policy measures, and the speed at which technology advances and changes are some of the reasons given to support centralised coordination. A further argument for a centralised form of planned intervention is one which points to the inevitably unequal distribution of benefits accruing to, and costs (not necessarily pecuniary) incurred by, those affected by planned action. Alternative allocations of resources at various administrative levels -- e.g. what resources will be allocated to education, health, social security, housing, protection of environmental amenity, recreation -- have significant effects in terms of redistribution of resources among individuals and social groups.

Even space, in terms of land or some use made of land, is not simply a container of things and activities but also a factor of production of urban goods and services; and decisions affecting its use have strong redistributive effects within urban society with potential ramifications reaching outside of the conventional limits of the city. Allocative problems, together with questions of communal goals, objectives, and steps that are outlined as necessary to meet such ends, bring to the fore the political aspects of planning and indicate

that the planning activity conceived of independently of politics is not a viable concern. Attempts to agree on social choices by considering the whole range of individual personal preferences reveals and crystallises group and value conflicts which, on some accounts, are inherent in society.

Such issues may not be possible to settle by applying strictly technical criteria but inevitably involve political and evaluative choices. The above considerations indicate that there is scope for a more centralised planning organisation, aimed at coordinating policies pursuing different objectives and at resolving conflicts of interest. However, the criticism regarding the lack of knowledge about interdependencies among different areas of policy-making is well aimed (FALUDI, 1973[b]: p.122). A centralised form of planning for the attainment of social objectives, involving coordination and mutual adjustment of different policies, must be distinguished from centralised public control and concentration of power for realising community goals by comprehensive and explicit control and direction.

A minimal core of regulative measures combined with the provision of a wide scope for incentives rather than with strict operational control of societal processes is not necessarily incompatible with individualist ideals and appears to meet the requirements for centralisation of coordination in planning policies. Mechanisms operating according to the dynamics of individual motives, such as profit, voluntary association for furthering common goals, etc. underlie processes in pluralistic societies and may be investigated and taken into account in the planning of societal affairs together with the mechanisms that are expressly constructed for the purpose

of regulation. The terrible image of a society that is "over-managed" by impersonal "social engineers" need not be the inevitable consequences of planning which is sophisticated enough to avoid "management" and the tampering with the freedom of the individuals. As regards the latter, planning need not restrict such freedom more than the political processes in pluralist democracies appear to do.

In the field of planning the various doctrines of individualism have had a strong and manifold influence on both epistemological and methodological issues. Regarding epistemological questions, individualism is identified as one of the main problems of planning (OZBEKHAN, 1970:p. 239) for it is taken to foster an attitude of ethical neutrality -- an unattainable ideal in the social sciences and in the planning of societal affairs. This is said to result from the view taken of normative propositions containing the operator "ought"(11) which are so common in planning since most policy statements involve prescriptions of one sort or another. Methodological individualism is seen as stipulating that "sense data cannot be directly communicated from one person to another, and that consequently every experience is singular. With such an assumption, truth becomes an individual matter, and values an individual, uncommunicable set of preferences about which no valid generalisations can be made. This purely "atomistic" viewpoint inevitably leads us right back to ethical neutrality" (ibid.).

It is doubtful whether Ozbekhan's view of "methodological individualism" is a very precise one given the contexts of ethics and epistemology within which his discussion is developed. What he probably means by "methodological individualism" in those contexts is "ethical individualism", viz. the view that the nature of morality is essentially individual (LUKES, 1973:p.99), associated or even conflated with

"epistemological individualism" which is a doctrine concerning the nature of knowledge and taking the source of knowledge to lie within the individual (ibid.: p.107). However, there are no conceptual or logical relations between "ethical" and "epistemological individualism" though there are identifiable structural similarities between the latter doctrine -- particularly in its empiricist version -- and "methodological individualism" (ibid.: p.143) which is basically a doctrine concerning the explanation of social phenomena. It stipulates that social or individual phenomena may be said to have been explained only if their explanations are couched wholly in terms of facts about individuals (ibid.: p.10). In this sense it is said to assert that only by analyzing social phenomena into their simplest elements, i.e. the individual agents, is their explanation attainable. This atomistic or reductionist (or even mechanistic) approach is shared by empiricist versions of epistemological individualism which pursue the reconstruction of knowledge by means of its simplest elements (ibid.: p.143).

The conception of "methodological individualism" criticised by Ozbekhan is claimed to be associated with the philosophical position referred to as Logical Positivism, in particular with one of the doctrines that have been expounded within that school regarding values, moral and evaluative judgments, and ethics: the so-called "emotive theory of values". In this view, ethical, moral, or value-judgments express the emotions of the speaker about some action, person, or situation to which they refer, and are not statements of fact which can be assessed as to their truth or falsity.

Hence, statements expressing value-judgments, being neither analytic nor synthetic, have non-cognitive meaning and are not admissible in scientific discourse (AYER, 1936/1975); (STEVENSON, 1944); (URMSON, 1968); (HARE, 1952/1972). There results a sharp distinction between straightforward descriptions which purport to state "facts" and impart knowledge, and utterances containing expressions of emotions, attitudes, preferences, prescriptions, or recommendations -- not all of which have the same meaning but are grouped together in order to be contrasted with factual statements. This is usually referred to as the fact/value distinction and has been the subject of much controversy in the field of ethics and moral philosophy (ATKINSON, 1958); (NEWELL, 1968); (HUDSON, 1970); and with respect to its tenability in the disciplines which study man and social life, having important implications for urban planning.

Now,"ethical individualism" is indeed closely associated with views asserting that facts and values are logically distinct; that any inference that purports to derive a normative conclusion from purely factual premises, viz. any straightforward passage in reasoning from the experiential "is" to the normative "ought", is a form of discourse that is not propositional (i.e. cannot be known to be true or false) (LUKES, 1973: p.101). Thus, empirical description of some existing sate of affairs -- say, the existing situation in a city -- is claimed to be incapable of providing compelling grounds for acceptance of specific conclusions of a moral, evaluative, or prescriptive nature -- say, some concrete proposal for planned action in the city, which would be uniquely derived from the evidence of the survey of the existing conditions and would be testable against such evidence. Moreover, description of the empirical "is" is taken to be unable

to dictate even limits to the range of possible value preferences -- say, the planning survey may not uniquely determine what is to be done or even logically limit the range of prescriptive statements expressing preferred courses of action in the city. Limitations may be imposed by choice but not derived from the empirical premises.

However, "ethical individualism" has received different formulations and does not comprise only the "emotivist" account (STEVENSON, 1944) which was referred to above -- viz. the view which analyses ethical utterances by stressing their emotive meaning as distinct from their prescriptive meaning (prescription of actions or attitudes).
A different account is the so-called "prescriptivist" view (HARE, 1952/1972), (HARE, 1963/1972), which stresses the prescriptive meaning of evaluative terms or statements containing such terms. These formulations, as well as various existentialist and humanist versions, such as Sartre's, are opposed by so-called naturalist and objectivist views of ethics and of moral and evaluative judgments. These latter views generally take the realm of ethics and other realms of knowledge and belief, say, science, to be equally accessible to systematic inquiry. They do not take those realms to be divided by some unbridgeable gap.

Naturalist and objectivist accounts of the fact/value relationship may be distinguished into two main forms. The first asserts that terms of ethics can be analysed into non-ethical ones; the second accepts the possibility of logically deriving ethical conclusions, recommendations, evaluative judgments, etc., from non-ethical, e.g. factual, premises. They take "the content of moral values and principles and the criteria governing moral judgments (as) not open to change but ... given -- whether through revelation or reason

or intuition or a proper understanding of the requirements of society or the direction of history or the principles of human nature" (LUKES, 1973: p.106).

The main issue in the dispute involving the fact/value distinction seems to be whether it is possible to discover or agree upon a way of establishing conclusions concerning ethical, moral, or evaluative questions. Given that such evaluative issues are central in urban planning, the view taken of the relationship between facts and values has important implications for the process of inquiry in planning and for the characterisation of the results from such inquiry. To the extent that a way of establishing evaluative conclusions can be found, terms such as "true" and "fact" may be unobjectionably employed to refer to those conclusions.

Ozbekhan seems to favour some version of a descriptivist ethic (akin to naturalistic ethic) as opposed to an emotivist or even prescriptivist account. He argues for a different conception of "truth" in planning, one that is far removed from the scientific ideal of orthodox empiricism: "truth" not as an individual, atomistic experience but rather as a "social fact", subject to change in the light of prevailing "Weltanschauungen" or world views, the shifting boundaries of knowledge, socio-historical influences emerging in various contexts of action (OZBEKHAN, 1970: p.239). Such a conception of truth does not appear to be at variance with so-called relativist accounts of scientific knowledge that will be discussed below.

Apart from any identifiable relations between the epistemological issues discussed above and the methods of inquiry that are to be employed in

the field of planning, there are other direct influences of individualist doctrines upon methodological aspects. Individualism associated with the realms of politics and economics is said to foster certain core human values such as "democratic equality", "equal respect for persons", autonomy in consenting and pursuing interests, equality before the impersonal laws of the market which favour the skillful and the lucky indiscriminately and maximise autonomy and choice. In this context, various forms of planning and intervention in societal affairs are seen as restrictive of such individualist values and hence viewed with suspicion. Those who are motivated by individualism are inimical to any form of planning whose scope goes beyond a bear minimum; for planning as an institutionalised process is said to be restrictive of individuals' freedom and self expression.

The kind of planning that they are prepared to accept is a technologically oriented one which is addressed to the solution of clearly delimited practical problems (POPPER, 1957/1962: pp.64-70); (HAYEK, 1952). This so-called "piecemeal social engineering" envisages cautious, step-by-step, disjointed, pragmatic experimentation, effecting solution of problems by <u>evolutionary</u> rather than <u>revolutionary</u> steps. Thus, it opposes other forms of planning which might be seen as deriving from holistic conceptions of society. The latter postulate that over and above its individual members society may possess properties pertaining solely to it as a whole -- social, historical, cultural characteristics -- which cannot be inferred from mere aggregation of the characteristics of its individual members.

Views taking society to be <u>really</u> an organic entity, a system of functionally interdependent elements, may be characterised as holistic

to the extent that they ascribe ontological status to the whole and do not simply take society to behave as if it were a system. The latter position, taking an instrumentalist view of systems, may be compatible with individualist approaches to planning for it regards "systems" as useful fictions providing fruitful insights into the way that society is organised, and so providing the source of predictively fertile hypotheses about it.(12)

Now, holistic approaches to the planning of societal arrangements, often referred to as centralised, comprehensive, or utopian planning -- though the meaning of these terms need not be identical -- generally tend to propose the introduction of bold, revolutionary, or system-wide measures derived from large-scale social doctrines and based on elaborate social theories, or visions of some ideal society, or global analyses. Thus they are seen to involve centralised public control for the realisation of collective goals, the inevitable concentration of power needed to attain such goals through explicit direction and coercion, and the consequent severe restriction of the freedom of choice of the individual and of his autonomy -- the latter being principal values of the individualist which are allegedly sacrificed in favour of the collectivity.

The strategy of "disjointed incrementalism (BRAYBROOKE and LINDBLOM, 1963) is advanced both as a model of how planning and decision making operates in Western liberal and pluralist democracies, characterised by entrenched bureaucracies and loose interdepartmental ties, as well as a prescriptive account of how planning ought to be carried out anyway in political/administrative contexts sharing the same liberal and pluralist ideals. This strategy is wholly compatible with Popper's

"piecemeal social engineering" and reflects most of the core values of individualist doctrines. However, "disjointed incrementalism" does not share Popper's suspicion towards planning of social affairs as such but takes it as a necessary social function. It is becoming increasingly influential in the field of urban planning -- though originally conceived in the context of politics and public administration -- where earlier so-called comprehensive approaches, attempting to cover the planning and control of all aspects of the city, are relinquishing their position as the current "paradigm" of the urban planning process of inquiry.

The rational-comprehensive mode of planning attempted to provide more "objective" definitions of the concept of "communal interest". It did not, however , succeed in demonstrating that such "public interest" can be identified in the first place; and if so, that it will be sufficiently representative of the wishes of the people. In short, the very validity of the concept of "communal interest" was left unquestioned. Thus, an ideological problem of urban planning was circumambulated by means of improvements in methodology rather than through a more direct study and evaluation of its ideological foundations. The fundamental question has remained unanswered. Instead, the notion of an objective function -- that is, a definable package of performance criteria for the socio-spatial system -- is taken to be valid in the transformed approaches.

Social conflicts generated by "communal" goals and the interdependence of the latter with the means available are generally ignored on the simplifying assumption that the social system can be studied in such a way that empirical facts are separated from issues of human values.(13)

Further, conflicts between values and between social groups are neutralised by the utilisation of some form of weighting procedure which hopefully provides functional definitions of the "public interest". These developments were part of a more general scheme aimed at integrating the planning activity (as a social decision making activity) with the context of scientific, hypothetico-deductive discourse (WILSON, 1968: pp.9-11).(14)

Thus, the basic criticisms of the rational-comprehensive mode of planning have concerned the limitations inherent in completely knowing anything; the lack of knowledge of urban structures and processes of change and interdependencies, which effectively constrains comprehensiveness of approach and coordination of different programmes; the definition of the notion, and derivation, of overall goals or "collective interest". Problems regarding the nature and degree of rationality that is attainable in urban planning -- given the involvement of political issues at all stages of the planning process -- have not been settled convincingly, especially as regards the extent to which the rationality which is characteristic of scientific inquiry is an ideal which ought to be pursued in planning both at the substantive and the procedural level.

These issues are discussed in a later chapter in the context of reconciling a humanistic outlook with some degree of rationality which is indispensable in planning, for the latter by definition implies rational and purposive action (HABERMAS, 1973/1976: p. 139f.). The notion of "bounded rationality" was introduced by H.A.Simon in the study of organisations (MARCH and SIMON, 1958: pp.203-210), (SIMON, 1959), to suggest the limitations of knowing and choosing

wisely and its contingency on "environmental conditions -- the social context of planning -- which represent the medium in and through which planning decisions are made" (FRIEDMANN, 1967: pp.226; 234).(15) Comprehensiveness in planning need not be conceived in the mode of (ALTSHULER, 1965) as requiring an omniscient planner who has complete knowledge of all conceivable aspects of some "urban system" and who seeks to rationally establish communal goals and scientifically deduce consequences for appropriate policies that satisfy those goals.

All it needs maintain is the requirement for investigation of interdependencies in the city; exploration of the ways in which action programmes might affect aspects of the urban structure and the mechanisms of change; assessment of the redistributive effects that such programmes might have for individuals and groups in the city; and determination to seek to study all relevant relations for the purpose at hand. This is to ask a lot in terms of the demands placed on available knowledge and technique, but it is not an unreasonable <u>normative</u> conception of planning and is not one that can be <u>established</u> as inferior to other alternative modes. Some awareness of the "whole", however that may be defined and excluding ontological implications, is necessary if planning is not to be a self-defeating exercise.

The suggestion could be ventured that looking into the notion of "historical totality", rather than a spatial/technical conception of "whole", might provide fruitful links between present programmes or action in the future and the historical dimension of change in a social/spatial complex. But there still remain the issues concerning risks of overmanagement and technicism in society, and

the derivation of community goals. The incrementalist critique of comprehensive planning does raise valid objections regarding such issues, but cannot avoid being charged with conservatism and lack of overall direction in its mode of planning (ETZIONI, 1967/1973).(16)

Regarding one of the basic assumptions of the early planning "models"-- that is, that the planners possessed "privileged" access to information concerning the concept of the "collective good" -- this also received the attention of the reformists of the 1960s. Extensive statistical coverage and computerised data handling, however far from ideal they may still be, confirmed this "privilege" in the eyes of the decision makers. Increased use of quantitative descriptions and techniques, and the expression of basic policy issues in terms of unnecessarily technical jargon is often said to have established the technocratic supremacy of the expert/planner over the laymen/planned.
The categories within which the "collective good" was to be pursued were decided 'ex cathedra'(DIMITRIOU, 1973) and indices expressing quantities of "good", e.g. "landscape value", were defined so as to support expert opinion. Thus, the separation of the technical (or theoretical) from the practical (or politics) was almost complete.(17)

The criticisms which were waged by social scientists and other academics against the results obtained from applications of the early planning approaches stemmed from concrete experiences of alleged inadequacies of urban planning "in action". Case-histories were examined, discussed and critically assessed, rather than the underlying social theory and ideological framework of urban planning nor the epistemological foundations of its conception of man in geographical space. It is indeed surprising of the practices of academic social

scientists that such criticisms did not precede planned action by questioning the conceptual schemata, assumptions and values of urban planners and social policy-makers, but were initiated by the outcome of planning operations. Nonetheless, the fact that criticisms have been founded in actual results should make these the more credible to professionals of planning.

However, it appears that the planners' conception of the inadequacies of the early approaches was misdirected. The reasons that were frequently evoked to account for the notable difficulties facing urban planning reflected two main concerns (i) the insufficiently developed planning framework in terms of comprehensiveness of approach or otherwise and in terms of rationality involved in the goal-formulating and decision making stages of policy making; and (ii) the inherent complexity of the "urban system", and the consequent lack of understanding of the underlying spatial and social structures and mechanisms generating change in the city. It may well be that the difficulties of planning must be sought deeper, in the planners' assumptions about the nature of society and its amenability to normative change; in the relationships between the experts/planners and those affected by their policies; in the planners' conception of man and its compatibility with the mode of knowing that is presupposed by the methodological apparatus of urban planning.

3. The shifting realities of society and technology.

The decades that have seen the methodological and ideological development of planning have also witnessed rapid societal changes reaching almost revolutionary proportions. Taking an overall view, some of the major elements of the changing social context of planning might be identified as follows.

(a) The changing institutional frameworks.

With the emergence of post-industrial societies and the emphasis on services "the existing trend towards big organisations was intensified. Large organisations evolved into vast clusters: business, government, labour, religion, etc. and the industrial labour force is being transformed into an increasingly professionalised salariat" (GROSS, 1971: p.276). In a number of highly developed countries (particularly in North America and Western Europe) the traditional "industrial metropolis" is being absorbed not only into the larger urban region, but in a nation-wide "urbanism". In terms of international politics, nation-states operate far beyond national boundaries in accelerating the emergence of a world-wide society which appears increasingly locked in conflict/cooperation relationships (GROSS, 1971: p.277).(18)

(b) The changing technologies.

The remarkable acceleration of technological change and advancement in industrialised countries (DRUCKER, 1969: pp.3-10) has born

the additional feature that as the number of new technologies increases arithmetically the number of possible combinations(including entirely new syntheses) rises exponentially (RIBEIRO, 1968: p.130). The marked unevenness in technological expansion has been evidenced by concentration of efforts on those fields that are associated with military applications, together with the vast computational, communications, transportation, personnel and supporting systems that are essential for the development and operational use of these. However, progress in "technologies" (19) which concentrate on the direct improvement of society, such as education, housing, nutrition, waste recycling, urban mass transit systems, has been comparatively very slow. The closer links that have been established between technology and science (HOLLIDAY, 1966) have resulted in a transformation of science from an abstract expression of human efforts to understand experience into the most effective agent ever known for manipulating nature, reorganising societies, and shaping human personality (RIBEIRO, 1968: p.128). Involvement of many specialised fields in any one technological development has given present day technologies their image of complexity.

(c) Crises in contemporary society.

The accumulation of social problems and the delay or failure to formulate viable solutions that would originate both in the advancing technology and in an emerging dominant ideology and inspired leadership has brought about a series of social crises. There is a sense of a crisis of survival manifested in an ever present vision of a nuclear world war (LIFTON, 1970). There is also a sense of a crisis of survival involving risks of world starvation due to extremely high rates of growth in world population and the strong

possibility of failure in providing an adequate supply of food and energy to sustain such growth -- not to mention the pressures on the environment which are generated by growth.

Moreover, the emerging trends of change in the organisation of society are manifested in a number of crises (20) and reveal a significant contradiction. The directions towards which the social context alters convey an increasing sense of drift, disorder, and breakdown of the guidance and regulatory processes of society at the same time that planning has become a generally established activity at all levels of the spatio-administrative hierarchy, having attained a high degree of sophistication, backed by vast resources, and dealing with all the settings of the temporal scale. As the circumstances surrounding the development of society approach the proportions of a crisis there emerge signs of new intellectual activity.

Strong movements become noticeable within which collective efforts are permeated by distinctive technocracy and the spirit of "elite domination" (GORDON, 1971: p.323). Significant examples are the contemporary movements towards "futures research", social indicators and the policy sciences. Other writers advocate the elimination of "technocratic planning" and the invention of more humanistic, far-sighted and democratic planning which guides the process of societal evolution itself (TOFFLER, 1970: pp.396 ff.) -- whatever the latter may imply. One of the limitations of these approaches, however, is their detached position in relation to emerging unprecedented changes in technologies and in institutions, and also regarding the nature of the crisis facing society.

Others suggest that planning (21) should abandon its ambition of comprehensiveness, or system rationality since collectivities cannot have clearly identifiable, non-conflicting goals (CYERT and MARCH, 1963). In this context, the only feasible outcome of a planned action is "sub-optimisation". Researchers in the organisational sciences put forward the argument that planning approaches which work from upper towards lower levels in the organisational hierarchy are likely to fail. They also add that plans developed in a "top-down" manner will be inevitably altered or subverted during their passage through the various hierarchical scales (HAIRE, 1959); (CYERT and MARCH, 1963: pp.15-16). The reverse process, that is, planning from lower to higher levels tends to suffer from continuous tension because of conflicting goals (CHURCHMAN, 1968). Still other workers contend that the resolution of goal conflicts can be effected by means of an "advocacy" process (DAVIDOFF, 1965).

This extra-rational criticism points to a <u>pluralistic style of planning</u>. In this, the desire to circumvent bureaucratic establishments and procedures or to find alternative structures to these; the determination of those that are affected by planned action to escape from the custodianship of the planners; the acceptance of the pluralistic dimension in social value systems; and the admission of the inevitability of considerable uncertainty in public choice will be key elements of its conception of planned social action. Nevertheless, this emerging pluralism will be confronted by the difficulty that no mechanism or ideology exists to adequately rationalise conflicts between groups generated by differences in community interests (DYCKMAN, 1971: p.331). The absence of a sound ideological framework from contemporary models of planning, or the

existence of a misguided one, or one that has been superseded by rapid societal change may be said to have resulted mainly from the analysts' emphasis on "positive" social analyses and the rejection of ideological influences on rational, scientific reasoning on the assumption that ideologies, belief systems, norms and values have no place in scientific discourse.

4. The ideological elements of urban planning.

Conventional use of "ideology" as a banner rather than as an operational concept has spread confusion about its meaning and has discredited its importance as a legitimate term in discources concerning rational/purposive action. Moreover, most political theories seem to have become anti-ideological and tend to place emphasis on "technique" rather than ideology (PARTRIDGE, 1961/1977: pp.40-41). The concept of ideology (22) appears to be fundamental in both: (i) the analysis of planning as a field of professional activity: no action at all is possible without some ideological basis; and (ii) in planning studies, where the selection of a preferred alternative implies an understanding of the nature of the beliefs that transform the alternatives into possible courses of action. In this context, ideology encompasses an important dimension of "praxis" (BAILEY, 1973: p.5).

Examples of issues in urban and environmental planning that involve ideological considerations are given in (GREGORY, 1971) where it is argued that problems that may be present in cases of planning dilemmas on environmental issues are evaluative and distributive. The evaluative problem arises when planners are faced with the need to evaluate and assess aspects of economic efficiency of some set of measures or proposed scheme against considerations of benefits or costs with no market value -- so-called intangibles -- loosely characterised as "amenity" of the environment. The distributive problem emerges as a result of a set of proposals which involve conservation of physical entities such as historical buildings, playing and recreation grounds, etc. which planners normally take to be "amenity-enhancing" measures entailing justified and quantifiable economic costs.

Now, the main issue is one of agreeing on a just distribution of the economic costs of enhanced "amenity" among those directly concerned and the community at large. The judgments that such evaluative and distributive questions necessitate involve aesthetic valuations and ideological positions. In both of these areas planners may not be the best qualified or specially experienced or privileged individuals to contribute --given the present system of planning education.(23) The ideological dimensions of evaluative and distributive issues of urban planning could most fruitfully be explored within the context of politics involving "practical" reason and the logic of the argument.

In current usage , the meaning of ideology is rather loose and variable. The term may be applied to describe : (i) ideals, political beliefs and programmes, moral positions; as well as (ii) reality. Beliefs

about reality are said to be founded on ideology or determined by it if they are generated or maintained in virtue of their connection with certain social interests (BARNES, 1977: ch.2 ; p.33): "knowledge or culture is ideologically determined in so far as it is created, accepted or sustained by concealed, unacknowledged, illegitimate interests". Ideology may be taken as a system of beliefs which is created to support the interests of individuals or social classes. It might be imposed on others by authority, persuasion, or indoctrination, though it appears as consensus until it is challenged and revealed as ideology through social criticism. In the neo-Marxist view of the Critical Theorists of the Frankfurt School, notably Jürgen Habermas, ideology could be described as a rationalision of consensus when it is challenged: ideologies are being brought into existence at the same time as the emergence of the critique of ideologies (HABERMAS, 1968/ 1971: p.99); (BURNS and BURNS, 1973: pp.14-15).

Ideology in the field of planning and policy studies is usually interpeted as the value component in development programmes. One tradition of social theorising -- which is not unrelated to the views of the Critical Theorists -- takes problems such as urban poverty, environmental deprivation, social injustice as the focus and the guiding interests of urban analyses. Within this tradition what is known as "normative theory" is replacing the part played by social philosophy. A "normative theory" could be advanced on the basis of some ideological conception of what ought to be the case and then proceed to clearly state the necessary conditions for changing some existing state of affairs into a more desirable one according to that ideal.

It would specify the underlying structures and mechanisms that generate the undesirable situation, say, urban poverty, that is to be changed. Hence its emphasis would be not on accounting for "what is" but on what could be or what ought to be the case. Normative theories are contrasted with non-normative or "positive theories"(DURKHEIM, 1962 : pp. 51-52): "Social theories separate themselves at once into two large categories. One seeks only to express what is or what has been; it is purely speculative and scientific. Others, on the contrary, aim to modify what exists; they propose, not laws, but reforms. They are practical doctrines".

Normative theory is identified with values and ideologies, with the "subjective" categories of thinking about society and the social problems that are to be solved through planning and policy making (HORTON, 1966: p.713). Most normative theories regarding the way to go about achieving certain ends reflect distinctive constructions and interpretations of social reality. Being part of the knowledge of intellectuals and specialists, their approach need not coincide with the subjective interpretations of those who are affected by the prescriptions of the theories. In some accounts this is remedied through the instigation of a dialectical process of communication between the "normative" planners and the "planned" which ideally produces a melting of individual horizons and mutual adjustments and readjustments.(24)

A general and widely accepted meaning of an ideological framework for intervention in the historical development of social/spatial systems is that which contrasts it with the scientific approach on two grounds. Firstly,while scientific reasoning involves the testing of a concept

against empirical evidence, the ideological approach reflects an intellectual interest in seeing the social system that is being planned conform to a set of ideas held about it which have been conceived independently of empirical falsification tests. Secondly, action based on ideology implies motives and interests of particular people and groups of people, that is, it implies subjective orientation (FOLEY, 1960). It therefore emerges as the opposite of the approach of the scientist who is presumed to be a dispassionate observer of theory-neutral facts, exploring the real-world phenomena independently of his subjective judgment, personal preferences, beliefs, and prejudices. It follows that while urban planning based on scientific reasoning represents a guidance system that is adjusted to the real world, the same planning framework founded on ideology would imply action in a world that existed by conviction.

However, this claim must be rejected on several grounds. Firstly, in the field of urban planning and policy making the evidence that is selected to indicate the consequences of pursuing or failing to pursue some set of ideals, goals, objectives cannot be free from some prior theory of how these facts are going to be used and what is expected of them. The evidence itself is capable of being interpreted in a number of different, often conflicting ways. This seems to be unavoidable given the nature of the field where the "facts" so often only acquire meaning in the light of value (DONNISON and CHAPMAN, 1965: p.28). Hence there can be no value- and theory-neutral scientific approach in planning and policy analyses.

Secondly, the idea that science and scientific reasoning ought to be employed in planning studies is itself ideological for it cannot be

properly justified by applying scientific method.(25) It is adopted by conviction rather than even pragmatic justification . Thirdly, the belief that the natural sciences themselves acquire and legitimate knowledge of the world which is free from subjective interests and value influences is giving way to the views advanced by the "newer" philosophy of science which take science as a social activity and identify in scientific knowledge many culturally given elements which do not derive from the objective interpretation of facts. Moreover, the idea that there are theory-neutral facts seems to have been abandoned.(26) In short, all knowledge is seen as interest-loaded (HABERMAS, 1968/1971), (BARNES, 1977) -- though there are different conceptions of what those interests are: prediction and control, maintainance of existing order, etc.; or whether they are overt or concealed.

All social knowledge is taken to be characterised by a normative structure determined by certain guiding interests of cognition with their corresponding vocabularies of social explanation (STRASSER, 1976: ch.1). For instance, system theories of society may be said to be guided by a social-technological and conservative interest; their vocabulary of social explanation is that of order, equilibrium and incremental planned change. The same could be maintained in connection with the positivistic organicism of Comte and Spencer (cf. Chapter one) as well as the positivistic mechanicism of Vilfredo Pareto's contributions to social theory based on the notion of (mechanical) equilibrium and seeking to apply the laws of mechanics to sociology (DIXON,1973:pp.30ff.).

Because the Pareto model can be shown to have close affinities with the "gravity" models of spatial interaction both can be said to be guided by the interests of order and conservatism and to perpetuate

the 'status quo' -- however unsatisfactory or socially unjust the existing state of affairs might be. This points to one of the risks in using such models in urban planning for predictions upon which to base prescriptive action programmes (OLSSON, 1974). For these models hypostatise a social condition -- accounted for by means of abstract conceptual categories and research methods -- as the inherent reason for seeking explanations of it; they take it for granted instead of making it the object of study and questioning whether what is to be described and explained ought to be as it is or whether it could be improved and how.

In contrast, critical theories (e.g. those advanced by the Frankfurt School) or radical theories of society could be taken as guided by social-emancipatory and progressive interests; their explanations are to be couched in the vocabulary of conflict, disequilibrium and radical and dractic planned change which removes constraints of various kinds upon individuals and groups by altering the processes and mechanisms, ususally concealed, which generate them (PEET, 1978). They stress the historical dimension of social reality, which is ignored by social technologists, and seek to anticipate new historical potentialities thus recognising not only purposive but also directed action. The notion of socially just conditions of life is the normative perspective of such theories as well as their organising principle (HARVEY, 1973).

If it is accepted that social knowledge has a normative structure, and if the knowledge that is acquired and used in urban planning is regarded as social knowledge -- as it ought to be -- then planning theory must presuppose some particular set of social interests (ROBSON, 1972:pp.24-25).

Moreover, in terms of procedural context, the administrative role of the planner -- in connection with other social administrators -- is essentially founded upon a set of administrative norms and styles which directly influence the formulation of a policy to be implemented. Therefore, there is a strong element of ideology, a normative level of beliefs and social values, in planned social action and policy making (CHRISTAKIS, 1973: p.551). Claims to the contrary, usually based upon professional or methodological traditions of empirical,value-free, culture-free study of social phenomena (ESCRITT, 1946: pp.111-112) are to be rejected for they are based both on a misconstrual of the nature of planning theory and an outdated and superseded view of objectivity attainable by science.

Regarding the nature of objectivity that is attainable in the social sciences (HARRIS, 1968: p.225): "Objectivity in social questions can mean no more than a certain open-mindedness; a willingness to acknowledge that one is oneself a party; a willingness to examine all the information available, all the arguments, and a willingness to answer them. It cannot mean presenting an answer over and above the answers of the existing parties to a dispute, adopting the posture of God who sees things as they 'really are' ".

A more instrumental construal of the concept of ideology in connection with planned action is that it represents an organised series of convictions, more or less explicit, which are linked in a hierarchy ranging from abstract and self-evident assumptions to practical day-to-day beliefs (HARRIS, 1968: p.43). Further, it enforces inevitable value judgments. It is a necessary but not sufficient condition for action and its divorce from pragmatic context is bound

to result in sterile and counter-productive effects of planned actions. Ideology ought to reflect the objects (i.e. the physical world) as well as the subjects which it is concerned with. The significance of ideological analysis in planning is at least as substantial as any other type of analysis which it necessarily precedes. Although knowledge revealed thereby cannot lay claims to being "the truth" -- both in a linguistic sense (not being falsified by empirical evidence) and in an ontological sense (being true to the real world) -- ideological analysis is acceptable as an explorative method attempting to make explicit the links between knowledge and complexes of subjective interests; and thus to bring these forward for comment and critical assessment.

From the preceding discussion it becomes clear that ideology is inextricably interrelated with urban planning. It need not antagonise methodological approaches that are based on scientific reasoning, though it would be incompatible with views postulating a sharp separation between values and facts. It could supplement such analyses with relevant information about social values and cultures. As was seen above, the pre-rationalistic planning "model" was founded on a certain ideological framework, however crudely this may have emerged from the discussion. Reconsideration of that "model", which ensued from its notable lack of success, resulted in methodological rather than ideological changes. The planners' theoretical and methodological background was improved; the field of observables was extended; the decision making and administrative procedures were rationalised. However, the ideological foundations of the "model" either remained unaltered or were eradicated in the name of rational reasoning and scientific discourse.

The methodological transformation which urban planning has undergone has taken place without due consideration to its ideological implications. Critics of this situation argue that contemporary "failures" of urban planning -- that is, of post-rationalistic planning -- cannot be accounted for simply by evoking the "complexity of urban systems" or the "lack of comprehensiveness" of planning approaches.(27) It is argued that the reasons for such "failures" should be sought in the assumptions of the planner about social processes and their mechanisms of change and adaptation to new circumstances; and in the pattern and nature of his relation to those affected by planning. Thus, the shortcomings of planning are said to originate from the realms of substantive theory, communicative competence, and systems of beliefs. The planner's conception of these realms does not seem to be compatible with the requirements of planned action.

The main issue appears to be the need to develop a positive(in the sense of non-negative) approach in relation to the contribution of ideology in urban planning. This would involve reversal of the tendency to eliminate ideology from the developing social/spatial theory for planning. The emergence of this tendency was due to the alleged incompatibility between ideological and scientific approaches (HARRIS, 1969: pp.55-58) (28) but this claim should be rejected. Accepting the need for an ideological framework to guide planned social action, and attempting to evaluate that framework in its own merits but inseparably from its context seems to be the most promising direction in a field in which the normative dimension of action is at least as important as the positive (in the sense of non-normative) for successful results.

5. Technicism, humanism and problem-solving in planning.

There are at least two distinctive and mutually exclusive ideological frameworks that appear prominently in contemporary planning discussions. On the one side, there is the pragmatic/ameliorative tradition of planning which stresses orderly rather than revolutionary change when it is required to improve unsatisfactory conditions or create new situations. Many if not most current conceptions of planning would fall into this category -- for instance, the disjointed incrementalist "model", the policy science "model" of planning based on a technological approach, and even the moderately holistic or comprehensive "model" could be so placed, for it merely requires study and exploration of the "whole" rather than the drastic and normative change that an extreme holist might advocate.

On the other side, there is an emerging normative tradition of planning which emphasises and pursues more or less revolutionary change in the existing social/spatial order in so far as the latter is affected by forms of domination and suppression, either apparent or underlying, that are generated by the system of material production and the structure of power and authority in societal processes. Critical and radical approaches would be firmly placed in this tradition of normative change -- though normative theories need not originate from Marxist social theory. However, they are only recently emerging as

plausible alternatives in planning. Now, this division between non-normative and normative approaches tends to give rise to two antithetical interpretations of the relationship between knowledge and action, between substantive research including model building and planning and policy making.

Arguing from one point of view, it is possible to claim that planning research is making a significant contribution to urban planning in terms of more informed decision making and action. Taking the normative view, it could be maintained that due to the absence of normative social theories of the city (29) there is what may be referred to as lack of moral direction in the field of planning as a whole : some distinctive kind of normative orientation. It would be obvious that if knowledge is conceived of as value- and interest-free, according to some views of science, then the knowledge that is acquired and used in urban planning following the "logic of science" that is associated with such views of science would leave no room for normative theory.

Thus a view which sharply separates facts from values and takes the latter as a matter of individual preference would render excessively precarious the connections between knowledge and action that are indispensable in planning. For that view would lead to the dinstinction between a realm of rational scientific discourse in which questions of means would be settled in a strictly technical manner free from ethical and value commitments, and a realm of moral debate in which issues of ends would be discussed and settled (much like the way in which political opinions are expressed) being relative to individual preferences, tastes, and subjective states of mind or consciousness.

Hence the settling of ethical questions of ends would be conditioned either by the belief that more detailed improved factual evidence ought to lead to more informed choices of means (say, through rational evaluation of alternatives after quantification of costs and benefits) or by reliance on the directive of"muddling through" and the pragmatic politics of negotiation and bargaining (DAVIDOFF, 1965), (PEATTIE, 1970). The recent attempts by moral philosophers to effect a rationalisation of moral discourse in terms of proposing sets of rationally defensible criteria for justifying or rejecting ethical decisions or statements (RAWLS, 1971) have been variously received by philosophers, social thinkers , and individuals actively involved in moral decisions of social policy. But such efforts have initiated debate on these issues from which useful results are likely to emerge which will be of great applicability to urban planning in its search for a rational ethic of action.

The fact/value dichotomy in questions of planning and policy making is also responsible for another wide-ranging discussion between the proponents of a technological approach to problems of planning and those who see in such an approach the risks of neglecting human values and ideals. Following conventional terminology, it is possible to distinguish "technocratic" or "technicist" and "humanistic" modes of planning as ideological alternatives (GROSS, 1971: pp.238 ff.). Planning on the basis of purely technocratic criteria would involve the pursuance of ultimate "rationality " without directly relating to advice from humanists regarding the ethical validity of "rational" choices. Creative technocrats would furnish intelligence on matters of societal management. This type of planning would involve rational decision making based on value-free scientific reasoning, methods,and

procedures. Technocratic professionalism presumes that it is possible for the planners to attain a level of "disinterestedness" or neutrality of "observation" in exactly the same manner as it is believed that scientists do (BAILEY, 1973: p.14). However, the development of knowledge of social/spatial "systems" over the past twenty years or so -- but also the realisation that there are many extra-scientific social and cultural influences in science itself -- suggests that the ideal of objective knowledge may not be attainable in research for planning and policy making (BATTY, 1973: p.38). In the place of a defunct value-free analysis of social/spatial phenomena a range of objectivity/subjectivity to which social scientists could relate is becoming increasingly acceptable.

"Technocratic" planning does not appear to differ substantially from the collective (social) engineering approaches of the 1950s, and would certainly encounter at least the same difficulties in discerning the immorality of the secondary consequences of "rational" decisions. Problems that might result from such an ideological stand would tend to be analogous to those that followed suburban expansion, and urban renewal and rehabilitation programmes in the past; with the familiar implications for modern urban slums, segregation, and alienation. But the most significant accusation that could be made against such a form of planning is that it cultivates and promotes an attitude of "technicism" reflected in supremacy of "technique" over essentially human values.

The other ideological alternative for planning emerges only tentatively and rather sketchily for the technicist image of the field is still well entrenched so as to exclude its rivals. It involves the establishment of a set of new premises for planning by <u>individuals</u>

for individuals, families, organisations and larger entities. The orientation of the new premises appears to be essentially "humanistic", as opposed to "technocratic". Such an orientation is said to entail different attitudes towards existing structures of power, value systems, and traditional rationality. Its conception of power and authority would be guided by human values and would relate to increased social participation in the control of resources, the priorities of development, and in decision making, thus enhancing pluralism. However, the restructuring of existing value systems which is part of the "programme" of a humanistic approach to planning would seem an extremely difficult operation both in terms of its conceptualisation -- e.g. which are really the more "humanistic" values? how are they to be specified? -- and in terms of its eventuation -- e.g. how is the change to be effected? Further, the traditional conception of rationality would be abandoned in favour of a new view which would involve the radical reconstruction of the doctrine that scientific, value-free analysis is the essence of rationality.(30) Moral commitment should supplement conventional value-free decision making which has been aiming so far at feasibility and consistency alone rather than desirability and ethical validity. In the new conception of rationality decision making should emerge as "value-creating" and action oriented.

It should provide the basis for evaluation of the rationality or irrationality of a planned action in terms of its substantive and moral merits rather than in terms of the explicit reasoning and calculations which are promoted in the technological model. In this context human rationality is seen as a "process of learning" which involves not only the acquisition of new knowledge and experience,

but also the development of new values and interests. Thus, the alternative to "technocratic" planning appears to consist in developing a "humanistic" mode of "learning through planning" and a theory of planning as a social learning activity (GROSS, 1971). This view lies well within the tradition of the "new humanism" in planning theory which was referred to earlier.(31)

The ideological framework that is referred to as "humanistic planning" (GROSS, 1971) is advanced as the viable alternative to existing "technocratic"/rational planning. It shares with the latter the mistrust towards the "grand social alternatives" of which (DAHL and LINDBLOM, 1953) are so critical. In so doing, it raises the question of its own status. If it is put forward as "the" alternative ideology for planning then it contradicts itself for it ought to be suspicious of its role as a "grand scheme". If it is advanced as only one of many possible ideologies then there is no inherently compelling reason why it should be more credible than its rivals. The difficulties involved in making this ideological schema both acceptable and workable in the realm of social action are, no doubt, legion. Creating new power structures and new value systems; restructuring institutions; overhauling the established conception of scientific rationality are indeed laudable ends but no mean tasks.

Nonetheless, the difficulties involved in rendering operative this conception of "humanistic planning" should not be taken to constitute its pragmatic refutation for it is always possible that they will be eventually overcome. This schema is interesting for its ascription to the human individual and community of cultural and value elements that are said to be imperfectly captured by technological approaches

to planning which tend to neglect the moral foundations of their analyses. It seems to share the cultural tradition of pragmatist social thought and is therefore exposed to the criticisms against that tradition regarding multiplicity of goals and the keeping of options open at all times which results in rather ineffective and vague planning -- if the ensuing activity could still be called so.

It does, however, possess many advantages over the "technocratic" or "technological" model, at least as regards planning, in that it is more human-centred, allows considerations of context and "wholes", stresses the historical dimension of social action and social organisation, and accounts explicitly for values in searching for arrangements of means to attain specific goals. Indeed it takes ends and means as closely interdependent in their formulation. If the "humanistic" model of planning (and here the term explicitly refers to the so-called "new humanism" school in planning) shares the pragmatists' epistemology as well as aspects of their social theories, then this would have important implications for questions of truth and testability (pragmatic theory of truth, pragmatic justification), the view taken of theories and models (instruments to do something with rather than copies of the world), but also for issues of ethics (pragmatic theory of values) such as the relation of values and facts. But it is doubtful whether the "new humanists" would espouse all these implications.

As regards the ethical perspective of humanistic planning, its attitude would be inimical towards fixed norms and values. Rather, intrinsic and eternal values would be seen as <u>relative</u> to varying psychological, social, historical, or logical contexts. Evaluative judgments would be

taken as essentially hypotheses or tentative claims to knowledge of what is good or bad, either for the individual or for society. To the extent that such judgments would be implicit hypotheses about what is valued as desirable or enjoyable they would be regarded as capable of being validated in virtue of their consequences. Value judgments would be hypothetical taking the form: "if men desire to attain certain goals in any harmonious way, they will probably achieve these ends by acting in accordance with such and such empirical conditions". Only by conducting themselves according to such hypothetical rules will men discover after trial and error experience whether they really find the attained goals desirable.

This principle constitutes the element of learning which is central in the conception of humanistic planning. Programmes of social and political action would be seen as possible hypotheses since they would be cast in the form of value judgments, but would be testable against experience in terms of their consequences. By regarding all value judgments as tentative while they are being tested it would be possible to modify and adjust or even reject claims to approval or disapproval implicit in them. Reappraisal of evaluative judgments would be possible at all times if further experience so requires. Each specific situation would have to be faced in terms of its peculiar characteristics and complexities and related to its more general context.

This view seems to transcend the classical antinomy between a scientific/technological, value-free approach to problem-solving and a humanistic[32] approach which captures and reflects the richness of peculiarly human values and assumes moral responsibility for action. But it is self-evident that its conception of science needs to be one which allows

for legitimate discourse in terms of values, rather than one which postulates a sharp dichotomy between facts and values and reduces the latter to mere statements of preference. In the context of planning, the view taken of the relationship between a scientific and a humanistic perspective on problems of social/spatial arrangements is likely to have pervasive consequences for the ideological foundations of some preferred mode of planning as well as for its epistemological stand. The relations between scientific and humanistic perspectives of planning are well explored in (HARRIS, 1967: pp.324-335), and (HARRIS, 1969: pp.15-20).

What emerges from these papers is that science and humanism are not irreconcilable (33) and can be fruitfully integrated to form a continuum in the context of the overriding problem-solving interests of urban planning. Thus, it is argued that humanism focuses on man and society and on their attempts to master themselves; while science has been traditionally concerned with nature and man/nature interactions in terms of man's interests in predicting and controlling natural occurrences. Now, these dinstinct but interrelated emphases are said to be inherently embraced by planning which is seen as reflecting both human interests in controlling, regulating and predicting the environment-- viz. the purely spatial or "naturalistic" element -- and in purposeful action addressed to dealing with problematic aspects of social life -- viz. the socio-economic and cultural element.

There does not seem to be much to object with in this conception of planning for in the course of purposeful design of social/spatial systems both science and humanism have essential contributions to make. Their relationship is said to be one of dialectical interaction

(CHURCHMAN, 1968). If such a view is accepted, the problem becomes one of specifying the precise nature of the dialectical processes. However, if science and humanism are regarded as mutually exclusive universes of discourse -- such that effective translation between them is precluded -- that is, if they are taken as dinstinct, closed and self-contained frames of meaning within which and only their corresponding terms become meaningful--then there is no way of attaining a fusion of perspectives and the dialectic is doomed to failure. Hence the view of science that is compatible with a reconciling conception of science and humanism is one which both allows mediation between frames of meaning or research programmes or paradigms and can accomodate notions of values, beliefs, and cultural elements of social life. Such a view of science is emerging in contemporary discussionsof the "newer" philosophy of science (LAKATOS, 1978); (FEYERABEND, 1975); (KUHN, 1962/1970); it is developed in later chapters of the thesis.

In this context, the "planning paradigm" that is advanced by (HARRIS, 1969) deserves special attention for it is a conceptual scheme which postulates the interdependence of scientific, humanistic and problem-solving aspects of urban planning. Viewing the conflicting interests and attitudes between the scientific and humanistic elements of today's culture from a perspective relevant to urban planning, it becomes apparent that the latter cannot afford to be either purely scientific or exclusively humanistic.

Humanism in planning reflects the pursuit of the appreciation of people; of their behaviour and their values; of enhanced communication between the planners and the planned. It is an essential component of

an activity developed specifically to improve the conditions of human existence. Science and its method of reasoning in planning implies the pursuit of theory and knowledge of society, of its environment, and of their interactions, in the manner of rational discourse. Nonetheless, there exists a third component in the activity of planning and this relates to the process of searching, systematically or intuitively, for solutions to "practical" problems: the problem-solving dimension (34) of planning (HARRIS, 1969: p.15). It involves finding suitable arrangements of sets of means such that sets of goals are attained; it is an activity that pertains to any operation of formulating policy for future action. This could be taken as "technology", in general, but it would not reflect what Harris is trying to say. For he employs "problem-solving" to refer to the heuristic search process for solving "practical" problems which need not be identified with some conception of the "method of science". Clearly, science and "practical" problems implies technology in which science employs its methods and procedures to investigate and solve such problems. Moreover,"pure" science also seeks to solve (intellectual) problems and hence involves problem-solving. For there to be three strands in Harris' "paradigm", it is essential to make explicit that the scientific strand does not already include problem-solving as a key element -- which is the widely held view of science as a form of problem-solving.

Recognition of the problem-solving element of planning as distinctly different from the field's humanistic and scientific dimensions is taken by Harris to suggest a conceptual scheme -- a "paradigm" -- that encompasses all three strands (rather than only the two, that is, humanism and science, as is conventionally accepted). Interactive

pairwise combinations of these strands provide useful insights into the nature of planning, but their discussion independently of the "three-way paradigm" is meaningful only for illustration purposes and does not reflect the nature of the planning activity. Association of humanism with problem-solving produces an activity of decision making which, in the absence of scientific reasoning, appears pragmatic, practical, giving full recognition to human values, and suffering probably from the effect of entrenched institutionalised bureaucracy. Roughly referred to as "the politics of everyday life", the field extending between these two elements of planning deals with both political decisions regulating societal action and the everyday adjustments of individuals and organisations to each other and to their environment.

The combination of problem-solving and science would describe the field of technology. The opposition which obtains between these two strands when they are considered individually ascribes to problem-solving the attribute of a unique activity.(35) Excessive emphasis placed on technology in urban planning ususally contributes to a strong "technological" perspective on problems whose solutions are fundamentally non-technological in the sense that they involve considerations of values and attitudes of those that are affected by decisions concerning policy. Finally, the allied activities of humanism and science delimit a realm which encompasses philosophy and social science -- obviously, naturalistic social science. This field addresses itself to the exploration not only of nature and society but also of man's relations to these. At the one extreme of the field this is achieved by studying the individual and his sensations and sentiments: the art dimension. At the other end of the spectrum the subject matter is

explored by employing abstraction, developing theories, experimenting with these, all in a value-free context: the science dimension. Harris argues that despite the apparent contrast between science and humanism which emerges from this discussion, these two strands are strongly associated and specimens of their positive interaction abound in philosophy, the social sciences, and the arts (e.g.literature).

The above "paradigm" of planning clearly illustrates the concept of an integrated rational/humanistic style of planned action which allows for the contribution of the heuristic ingenuity of the planner. The presence and fruitful interaction of the scientific and humanistic elements is a necessary but not sufficient condition for the planning activity to take place. It would need to be supplemented by the professionals' intuitive search processes. Moreover, the "paradigm" ascertains that planning provides the scope for both humanistic and scientific dimensions. Although these may appear contradictory when they are contrasted as individual entities detached from the milieu of planning, they are characterised by rich synergistic effects when they are perceived in interaction within the context of the activity of planned societal development.

As a very abstract and general shcema Harris' "paradigm" may be regarded acceptable, in principle, if its underlying ideology of order is accepted. It does bring together, though it does not make any specific suggestions about ways of integrating, the strands of practical politics of everyday life, technological problem-solving, and the humanism/science continuum which could be plausibly regarded as characterising most planning activities. According to the "paradigm", planning without science becomes a process of bargaining and negotiation

on proposals that have been intuitively arrived at. Though this could be a haphazard affair it obviously need not be. Much, often brilliant planning has taken place in the history of mankind when science was still in its infancy or even when it was proving highly successful. Planning is inconceivable without its humanistic and problem-solving components though it is conceivable, and often successful, without science. The scientific perspective is introduced in planning in the belief that science will be equally successful in tackling human problems as it has been with problems of nature and technology. The justification of such a belief is predicated as much on the uses to which science is put in planning as on the conception of science that is employed in the field.

Without its humanistic interests, planning reduces to technology taking essentially human problems as disguised technological problems and seeking solutions which presuppose as given a set of goals. The break between the realms of ethics, culture and values, and beliefs, and the realm of science and technology diminishes the moral and social credibility of technologically derived solutions and so renders planning sterile in terms of results, alien in its social context, and an ethically questionable exercise. It is this reduced form of planning that is usually attacked in humanistic critiques and which should be rejected as a viable alternative.

However, it is the third combination of perspectives that seems to present the most serious difficulties. Firstly, what would planning be without its problem-solving activity? Probably an academic discipline: collecting knowledge about the world of man and society—and its interaction with nature—in its "subjective" dimension; and also

proceeding scientifically to study its "objective" aspects -- the latter being subject to the usual constraintof value-neutrality. Although there is nothing pejorative about a field like planning being an academic discipline, it would not be planning any longer for it would lack the dimension of purposive action upon its subject matter aimed at effecting changes by way of plans and policy proposals. Knowledge and action are interdependent in planning, and knowledge cannot be applied to guide action unless there is an activity of problem-solving.

Secondly, how could a fusion of two domains -- with their own ways of looking at the world and their associated ontologies and epistemological theses -- be successfully implemented in a way which is intelligible and credible to both, when it can be shown that workers in these realms often do not speak the same language? Given insuperable difficulties of commensurability, there is the risk of examining only those aspects of humanism that may be meaningful to a scientific study and neglect those that are not amenable to such analysis or are incompatible with the view of science that is accepted. Many humanists criticise naturalistic social science for precisely this result. Some of the difficulties of employing methods and procedures developed in the natural sciences to investigate and theorise about human beings and their social life are explored in later chapters. It is especially pointed out that methods and procedures of inquiry should not be regarded as neutral instruments of research which could be applied to many different milieux irrespective of substantive content of the latter. The view taken of the relation between form and content of inquiry has important implications for theory and practice in urban planning. The methods

and procedures of knowing will be seen to determine a perspective on the world and to be grounded in practical human activities or "forms of life".

Pervasive methodological changes in the domain of the social sciences; the emergence of a body of theory of living organisms(General System Theory) and its extension to many realms of social science; the increasing magnitude and complexity of problems associated with urban societies; significant new needs and technological advancements in the area of analysis and regulation of the development of human settlements; all these have contributed in generating dramatic changes in methodological orientations in urban planning and have put into question the latter's ideological foundations. Some workers take the thoughtful application of more rigorous scientific principles of reasoning and methods in both the theoretical and the procedural fields of urban planning as the outstanding characteristic of the reorientation of planning and place on this development their hopes for fruitful results.

Others have contested the unreserved belief in the powers of science to reach solutions of the irreducibly human problems of urban planning, mainly because a "value-free" scientific approach is taken to be unable to provide an understanding of societal value systems and the process of their formation. But it could be argued that these would simply be treated as part of the "object" of investigation. To say that science is "value-free" is not to say that science cannot ask "positive" (factual?) questions <u>about values</u> -- and their social roles, processes of formation, etc. However, even if this is conceded, the mode of apprehension of such "things" as values, motives, feelings, purposes,

reasons for acting is essentially different between scientific inquiries and humanistic studies. The former proceed on the basis of observation and testability to secure correspondence of their statements and propositions with empirical reality. The latter operate on intuition and interpretative understanding to ascertain the coherence of their material within some broader (historical or social) totality.

A validated conceptual framework, a general social and spatial theory of planning, has not yet been propounded in a way that encompasses both the processes of acquiring and formalising relevant knowledge and the processes relating to control and regulation of social/spatial "systems". Unlike the natural sciences where exacting research procedures and evaluation standards exist, in planning the problems of choice of research methods, the selection of evaluation criteria, the difficulties involved in assessing the importance of various characteristics of alternative solutions, and the questions concerning the availability and suitability of means for implementing the selected solutions are still unresolved. However, it is doubtful whether these problems can be solved in general, or in the abstract, at all. Rather, they would have to be approached and solved on a project-by-project basis.

CHAPTER FOUR

Philosophical versus methodological considerations in discussing methods and procedures of inquiry: implications for theory and practice in urban planning.

C H A P T E R F O U R

Philosophical versus methodological considerations in discussing methods and procedures of inquiry: implications for theory and practice of urban planning.

1. Methods of inquiry and their relation to substantive content: two alternative views and some of their implications.

2. Some related aspects of the "methodological debate" in the social sciences.

3. The distinction between substantive and procedural aspects of urban planning seen in the context of interdependent content and method of inquiry.

4. Methodology, research strategy, method, and technique: some distinctions.

5. Philosophical versus methodological approaches to studying methods of inquiry: can these be reconciled?

(Chapter four, contd.)

6. Some arguments from the "newer" philosophy of science : paradigms, research programmes, theoretical and methodological pluralism, proliferation, and anarchism.

1. Methods of inquiry and their relation to substantive content: two alternative views and some of their implications.

There seems to be little doubt that the concept of method is to be found on the rational (mind) side of the classical dualisms alleging separate functions of : the rational and the empirical, reason and sense experience, ideas and objects, form and content, thought (knowledge) and action, theory and practice; and of subject matters such as mind and body, ideal and real, value and fact, nature and man, society and individual, environment and organism, abstract whole and concrete part. Method of inquiry(1) may be contrasted to substantive content or subject matter of inquiry. Although it is reasonable to suggest that a method is a logical construction -- a kind of form that the operations of thought have produced -- there is no unanimous agreement on whether or not it relates to anything which is not purely mental in the world; whether or not there is any interdependence between form and content, method and subject-matter of inquiry. The kind of answer given to this problem concerning the relation between logical form and substantive (or empirical, or material) content of scientific inquiry provides one of the various, more or less

artificial, ways of classifying philosophical views. There are, in general, two contrasting views on this issue (NOVACK, 1975 : ch.8); (THAYER, 1968: p.454).

On the one side, there are those who maintain that forms of thought and, by extention, methods of inquiry are wholly independent of substantive content and socio-historical conditioning. For them methods may exist apart from any objective reference; for they claim that form is absolutely counterposed to substance. This so-called "formalist" view contrasts with the thesis of those who argue that logical forms possess real content -- some being richer in connotation than others -- and that methods of inquiry are essentially interrelated with the empirical materials to the study of which they are invoked to apply. In between these two extreme positions there is a wide variety of intermediate stands. The implications of the two main antithetical theses for the nature of the methods employed in scientific inquiry have been traced by various writers in ways that do not seem independent of their philosophical points of view.(2) Thus, on one account of the 'interdependence' thesis -- associated with the philosophical outlook known as pragmatism -- "a method of analysis and critical evaluation of ideas does entail metaphysical and moral commitments as well" (THAYER,1968: p.454). In this view, adoption of some particular method of analysis entails acceptance of certain theoretical consequences concerning "the kind of world in which that method is successful (or the only appropriate one for the purposes it accomplishes), and the kind of creatures and conditions of behaviour for which that method is of use and importance" (ibid.). This argument suggests that to detach a method of inquiry from the subject-matter to which it applies -- viz. its objective content --

in order to assess its validity may be an unacceptable distortion of reality.

This view will be accepted in this thesis; though not necessarily accompanied by the specific philosophical outlook of pragmatism -- the latter being one of several contexts in which this view has been advanced and with which it is compatible (such as Marxian social theory, Hegelian idealism, etc.).(3) Thus an assumption of this thesis is that any particular methodological approach is founded on presuppositions, more or less well conceived, regarding the nature and grounds of knowledge and the kind of world knowledge of which is sought. These epistemological and metaphysical foundations are not in themselves a set of methods but direct and inform any such set. A given set of methods may explicitly represent only one facet of an epistemology but may be influenced by other concerns. Consequently, a taken-for-granted, unexamined, and mis-specified epistemology may lead to methodological confusion, just as the bluntness of methodological analysis substantially reduces the usefulness of even the most sophisticated techniques. A further, related assumption accepted in this thesis is that methodological prescriptions cannot intelligibly be separated from their theoretical and practical consequences, but rather condition the direction which research may take. Hence it is important to investigate, in order to reveal, often implicitly made presuppositions underlying the development and use of models and theories with special reference to the role played by these cognitive devices in the field of urban planning. Such presuppositions often owe their origin not so much to any <u>empirical</u> predicates, but to <u>axiological</u> predicates derived from assumptions about the world and everything in it.

It is essential to state this at the outset because it is a consideration which one expects to guide the ensuing discussion of the "methods of science" (meaning "natural science"), but also the examination of the question of the appropriateness of employing "scientific methods" in other contexts such as the social sciences and urban planning. However, it does not seem possible -- within the narrow confines of this thesis -- to pursue such a consideration with unfailing consistency. Especially as regards the so-called "method of science", it is impossible to investigate fully all the philosophical (metaphysical, ontological, epistemological) presuppositions that may be claimed to be entailed by employing various versions of "the method of scientific inquiry". Some attempt at a compromise is made below, where it is examined whether or not a discussion of "methods" can be strictly methodological and to what extent it will have to involve philosophical considerations.

Further, it can be argued that since the interests of this thesis are firmly rooted in the social sciences and, in particular, in urban planning, such an orientation must introduce some form of "bias" in the selection of material for discussion and the nature of the conclusions that are likely to be drawn from it. Now, this may be taken to imply that "the method of science" -- however that "method" may be construed -- is not directly applicable to the subject-matter of the social sciences and urban planning.(4) This implication is accepted in this thesis as a plausible contention, though one for which it is not possible to provide any reasons that can remain unchallenged, and any "ultimate" justification. Some of the reasons for preferring some version of a "peculiarly humanistic" method of approach are discussed below.

However, it should be stressed that such a view has not been dictated by experimental findings but has been the result of intuitive, but non-arbitrary, choice based on the acceptance of a 'prior' system of 'basic beliefs' which stresses the human as opposed to the physical element in man. It is thought that, given the present state of knowledge regarding man's neuro-physiological constitution, the opposing thesis of "naturalism" has no 'objectively' sounder foundation than the humanistic view, and may thus be taken as an equally acceptable thesis to inform the various methodological programmes that are compatible with it -- e.g. programmes advanced by Popper, Quine, and marxist historicists. Thus, the stated preference for some peculiarly humanistic approach to the study of "theoretical" and "practical" aspects of urban planning does not entail agreement with more or less extreme views of humanists like Dilthey, Heidegger, and Gadamer who seem to advocate wholesale rejection of all methodological programmes inspired by naturalist views (often wrongly referred to as "positivist"). In short, it is not thought that the alleged uniqueness of human phenomena is an argument which is sufficient to justify total rejection of any form of scientific study of social life.

Now, if it is argued that a statement of preference for a humanistic as opposed to a scientific approach ought to have been justified by some suitable application of the "empirical method of science", then the following objections may be offered : (i) there are several apparently incompatible accounts of the "method of science" advanced by different schools in epistemology and in the philosophy of science;(5) (ii) it is not obvious which of these accounts is to be preferred and how such a preference is to be justified; (iii) if the choice is to be made by employing the "method of science", then it is not clear

which account of "the method of science" to use in order to decide which account of the "method of science" to accept. This involves one in circularity. If it is decided not to rely on any account of the "method of science", but rather to seek to study the scientists in the process of their activities and identify their method-in-use, then the question might be raised about where to focus attention in such a study: for scientists like Mach or Einstein, zoologists, astronomers; or social scientists such as sociologists, economists, geographers, urban planners, seem to employ their own versions of "scientific method" or of "method of inquiry". One might also ask why the method of astrologers or scientologists is unacceptable in discussions of the "method of science"; or why the version of the "method of science" advanced by logical empiricists is taken by many to be unacceptable. Now it seems that answers to such questions have to be viewed as founded on some "prior philosophies" or system of basic beliefs which cannot be avoided (LAKATOS, 1972:pp.91-136).

2. Some related aspects of the "methodological debate" in the social sciences.

Certain issues involved in the so-called "methodological debate" in the social sciences are discussed below, both in this and in a later chapter. Actually, the anti-naturalist arguments are far more sophisticated than is suggested in this text, and their critique is often well aimed, especially when it is addressed to the positivist and logical empiricist conception of natural science and scientific method. As described elsewhere (cf.Appendix to Part II, entry : "Positivism") this conception of natural science makes a number of

claims such as: (i) the possibility to formulate high level generalisations (general laws) accounting for human phenomena; (ii) a predictivist account of explanation; (iii) the use of experimental procedures to directly confirm or falsify theories. The anti-naturalist's comments on these positions are, respectively: (i) that individuals and social events are unique and this characteristic precludes the possibility of formulating general laws relating to them; (ii) that phenomena which depend on human activity cannot be subject to accurate prediction; (iii) that it is impossible (or, at least, unethical) to conduct scientific, controlled experiments on human individuals. Other important issues raised in the "methodological debate" concern: (A) the nature of human action; (B) whether or not it is possible to construct objective social theories ('objective' in the sense that the term is employed in natural science). Very roughly, the following points may be made with regard to these two central issues.

(A) Consideration of the nature of human action involves answers to at least two distinct questions, viz. : (A1) on the kind of explanation that is most appropriate for human actions -- whether it should be causal or non-causal explanation; (A2) on the nature of knowledge of social phenomena. Consider what is involved in (A2). Given that human beings are unlike rocks; that the "forces" moving them as beings rather than bodies are (unlike gravity) "meaningful stuff" such as internal ideas, feelings, motives, values; that human beings are purposeful, goal-seeking, meaning-attributing, meaning-responding creatures; can it be sensibly claimed that the nature of knowledge obtained from the study of such a subject-matter is the same as that of knowledge of natural science phenomena? Further, if

with (SCHUTZ, 1963: pp.231-249) it is recognised that the social world possesses an intrinsic meaning system an equivalent of which cannot be found in nature (i.e. relevance is not inherent in nature but is the result of selective and interpretative activity of man within nature), then there follows that facts, data, events in natural science exist within the observational field and do not mean anything to the molecules, atoms, electrons therein. If this is the case, then it may plausibly be suggested that there is an irreducible something which is not captured by way of social inquiry which employs the positivist version of the "method of natural science" (or the "logic of science"). In one set of views, the method known as interpretative (or interpretive) understanding ("verstehen") is capable of capturing the "irreducible" meaning aspects of social phenomena and is peculiar to knowledge of social reality. From Max Weber and Alfred Schütz it follows that it is possible to develop a "verstehen" approach and subject its results to empirical testing for acceptance or rejection. From a number of views in the philosophy of science claiming that an adequate philosophical account of the natural sciences must also include some conception of "understanding", there follows that it may be possible to relate the peculiarly humanistic concept of "verstehen" with a non-positivist account of scientific method. One attempt to develop such an integrated schema is made in (KEAT and URRY, 1975); it is founded on the philosophical outlook referred to as Realism (in the specific sense that this outlook has been formulated in the writings of Rom Harré -- cf. Appendix to Part II, entry: "Realism").

(B) On the issue of objectivity in social theories, it is often said that there is, on the one side, "objective" social theorising and, on the other side, "ideological" social theorising. Two conceptions

of ideology are currently in use in social science : the one is akin to the main sociological tradition, the other derives from Marxian tradition in social theory. Though both take it as a "distortion" of reality, they interpret "distortion" differently. In the traditional non-Marxian view, ideology involves distortion because of the intrusion of values that permeate it (values such as political, religious, and moral beliefs). "Objective" social theories are said to be value-free and are contrasted with value-charged "ideological" theories which are "contaminated" with "subjective" elements.(6) Many writers express doubts that it is possible, or even appropriate, to divorce considerations of values from "objective", "value-neutral" social theories. They argue that all knowledge about the social world is ideological.(7) Assuming that this is correct, one suggestion might be to clearly state some preferred value outlook (some set of "interests") and formulate social theory directly in relation to that outlook. Acceptance or rejection of such a value configuration would influence answers to the question of truth or falsity of the value-impregnated theory. This approach would raise considerations regarding the relations between "subject" and "object" of knowledge, between the knower and the known, between cognition and practical interests, between thought and action, between theory and practice. Such relations have been examined in the context of the philosophical outlook known as pragmatism by writers such as John Dewey; and are currently being explored by the social thinkers of the so-called Frankfurt School. Reference to the work of Habermas and its focus on Marxian social theory is made below.

To carry this approach over to the field of urban planning, the relations between knowledge and action, cognition and practical

interests, theory and practice would suggest relations between theories and models of urban social-spatial organisation and the programmes and policies for planned action that are informed by them -- relations between procedure and substance. Certain implications of such a view for the method of planning to be adopted have been traced in (DAVIDOFF, 1965) where a conception of "advocacy planning" is expounded. This approach argues against ideals such as value-neutrality and suggests that it is not possible to separate the ideological beliefs of the individual planner from the carrying out of his professional activities,and that the definition itself of social problems which are taken to necessitate solutions through planning is not independent of particular interests and value judgments. Thus, programmes for planned action should be developed and constructed so as to explicitly sustain and reinforce the evaluations and aspirations of particular social groupings. The pluralism of interests and the recognition that "the public interest" may not be possible to be served in toto -- if possible to define at all -- should result in corresponding pluralism of planned solutions to various problems.

One line of argument against this view might be that the advocates of "advocacy planning" find it desirable that future societal arrangements should be dependent to such great extent upon current, fallible assessments of value, of interest, and of the means of furthering interest. Surely it would be a preferable, if perhaps less realistic, ideal to seek to know before one judges, to seek to minimise the need for rationalisation of particular interests as a component in the construction of societal arrangements, and to seek to express the intention of a "good life" and an "improved environment" in well-informed and well-constructed activity. However, even though wishing

to know before passing a judgment is an honourable objective its realisation seems to be constrained by interest-charged modes of obtaining and legitimating knowledge relating to problems of urban planning. If this is accepted, then solutions to interest- and value-loaded definitions of planning problems should take into account such interests and values and state them explicitly so that they are accessible to social criticism and exposed to analysis through, say, the method of logical argument.

Further, this approach may be open to the charge of self-defeating relativism. Thus, if it is proposed as the 'best' account in an objective sense how can it be justified by its own tenets? Why should one particular method of planning -- viz. "advocacy planning" -- be 'best' given that it is proposed in the light of the pluralism in the ways of defining urban problems as well as the pluralism of interests and values involved in those definitions and in the solutions to such problems? Conversely, if it does not claim to be the 'best' account of a planning method in an objective sense, then why should it be accorded credibility or be preferred over other potentially equally valid methods? This is, of course, the classic argument against relativism and will be referred to later in this thesis -- especially in the context of the Kuhn-Popper debate on the "growth of knowledge". For the purposes of this chapter, it is sufficient to state that the justification of the method concerned is taken to lie within itself and the particular conventions pertaining to the context within which it is employed; though it is conceded that such justification may be at variance with justification in an unqualified sense.

Moving now to the Marxian notion of ideology, this has been employed

to criticise the view that ideas are autonomous or that they have the power to shape or determine reality; or to advance the claim that all theory is socially determined. Ideology may also be seen as some kind of justification which marks some particular set of interests. This conception of ideology derives from the contention of Marxian social theory thatthe distinction itself between facts and values, empirical knowledge and human ideals, cannot be maintained. This appears to be a much stronger claim than the one in which it is suggested that values intrude into the acquisition of factual knowledge of the world. On this Marxian account, facts and values are not logically heterogeneous : the methods by which knowledge is produced in a society, and the substantive content of such knowledge, are inextricably connected with the social relations of material production -- practice or practical activity.(8) Ideology is said to involve forms of distortion which depend upon the relations of material production. The main defect of ideological belief is taken to be "reification".(9) Acceptance of ideologically distorted beliefs serves the interests of particular social classes : but it is the underlying structure of social relasionships, rather than the dominant social class itself, which systematically generates ideological distortions that serve the interests of that social class. On this view, an adequate social theory would have to: (i) represent the beliefs held by the members of some society; and (ii) show how some of these beliefs are false, having been distorted by the ideological beliefs of that society, and why they develop and are sustained.

3. The distinction between substantive and procedural aspects of urban planning seen in the context of interdependent content and method of inquiry.

Apart from issues of methodological significance for the ensuing discussion of "scientific method", the questions explored in this chapter are of importance for the field of urban planning as a whole. This may not be immediately obvious; and although these issues will be investigated later in this thesis, it may be useful at this stage to provide some indication of how the connections between the discussion in this chapter and the field of urban planning are to be established. Very roughly, one of the more or less artificial ways of subdividing the field of urban planning is that which takes it to consist of substantive and procedural aspects. The former pertain to questions of subject-matter proper, that is, laying down the range of subjects that should and could be meaningfully dealt with within the boundaries of the field. "Theories", and models of urban social-spatial organisation which are employed to inform planning decisions are developed within this so-called knowledge component of urban planning; and are commonly referred to as "theories in planning".

Substantive aspects of urban planning are contrasted with its procedural aspects. The latter comprise considerations of method or process involving formulation of and agreement on operational rules, rational procedures, and techniques of research aimed at attaining the objectives of the field -- e.g. procedures for relating means to ends, techniques for reducing the number of alternative proposals to be evaluated for inclusion into some finalised policy statement, rules regarding linkages of planning and policy-making activities

at the urban level with higher and/or lower levels of the administrative hierarchy, normative accounts of the structure, purposes, and activities of the process or method of planning. These may be referred to as the action component or practice aspects of urban planning; and the "theories" or "models" of planning process developed to account for such aspects are conventionally characterised as "theories of planning"[10](FALUDI, 1973[a]); (FALUDI, 1973[b]); (FRIEDMANN, and HUDSON, 1974); (GALLOWAY and MAHAYNI, 1977); (HIGHTOWER, 1969).

It may be argued that the "substantive component" of urban planning refers to the subject-matter or content of inquiry in that field: that it denotes its area of specialised knowledge. Further, the "procedural component" corresponds to the reasoning processes whereby knowledge about the subject-matter is made use of (is applied) to the solution of relevant problems: this might be seen as the realm of social activity, as part of the social structure, which urban planning represents. Now, this way of bifurcating the field of planning would seem to entail acceptance of the well-known dualisms claimed to exist between : content and form of inquiry, subject-matter and method of study, knowledge and action, "objective" facts as the "positive is" and "subjective" values as the "normative ought" -- though, to be precise, these categories do not correspond exactly with one another.

Acceptance of the substantive-procedural dichotomy in urban planning would involve taking "objective" theories and models of the city and its social-spatial organisation to be independent of the process of planning which would be seen as being founded on ideologies, interests, rational and/or ethical principles of evaluation, and the like.

The latter would lie in the realm of the "subjective" -- in the sense that they would be products of the human mind rather than hypotheses founded on experiential evidence -- and it would not be possible to "objectively", experimentally adjudge them as true or false, but only decide on their acceptance or rejection through logical arguments, social agreement, and convention. Acceptance of a clear distinction between substantive and procedural components of urban planning implies that "the (planning) method is largely independent of the phenomena planned" (WEBBER, 1963 : p.320). This view is also expressed by Davidoff and Reiner who advance their version of the "planning method"-- so-called "choice theory of planning" -- as applicable "...equally well to such diverse endeavours as urban land use planning, national economic planning, business planning and others, for the same steps are followed no matter what the substantive or geographic focus" (DAVIDOFF and REINER, 1962).

Alternatively, the substantive-procedural distinction may be claimed to be untenable if urban planning is viewed "as an activity centrally concerned with the linkage between knowledge and organised action. As a professional activity and as a social processes, planning is therefore located precisely at the interface between knowledge and action" (FRIEDMANN and HUDSON, 1974: p.2). On this account, the way that the nature of planning problems is defined, that is, the way that the object of planning is looked at and theorised about, will have a bearing on the selection of method to be employed in the search for appropriate solutions as well as on the content of such solutions (CARTWRIGHT, 1973). This suggests that a (procedural) theory of urban planning may not be conceived wholly independently of a (substantive) theory of the city (HARRIS, 1960 : p.272).

The "substantive-procedural" dichotomy which might be taken to reflect the distinction between a field of specialised knowledge and a social (institutionalised) activity which is an element of the social structure is not as straighforward or warranted as it appears prima faciae. It is possible to discern a general and a particular level of discussion in exploring the relationships between the two allegedly distinct aspects of urban planning.

(A) At a general level, the field may be seen to involve policy making, implementation and control which are activities informed by knowledge of the existing state of affairs and by socially held or acceptable goals and objectives which would provide directions for a desirable future. In this sense, planning exists as a field of specialised knowledge as well as a social activity: it is part of the cultural history of ideas and a component part of the social structure. The drawing of a distinction between the substantive (theoretical) and the procedural (institutional, methodological) components of urban planning involves separating cultural and historical from social structural aspects of human communities. But it would be absurd to divorce institutional arrangements from the social, cultural, and historical context within which they gain their expression and articulation, developing in accordance with the salience of political, economic, social, and cultural issues at historically important times.

It is, moreover, exceedingly difficult to clearly demarcate the areas concerned for practitioners of planning are often engaged in theoretical inquiry and formally contribute both to the academic study of policy making and the procedural aspects of urban planning. Further, the latter are being increasingly influenced by substantive (theoretical)

schemes and doctrines originating from a variety of other disciplines whose areas of concern overlap those traditionally falling within the scope of urban planning. The resulting interaction between the articulation of substantive and procedural modes of planning provides an intriguing context in which to observe and study the enormous complexity and profuse subtlety of the relationships between thought and action.

(B) At the more particular level, questions arise as to whether substantive theories and models of social/spatial phenomena are to be related to or distinct from procedural concerns of planning. The notion of interdependence between <u>procedure</u> and <u>substance</u> in urban planning has its advocates, though it is not certain whether there is exact correspondence among the meanings attached to either by various writers. Thus, in an early paper Britton Harris argues that (HARRIS, 1960: p.272): " ... at least for the moment there can be no theory of city planning wholly divorced from a theory of cities, and hence no general theory of planning as such".

In a later work he asserts that (HARRIS, 1974: pp.65-66) a theory of social change and societal development -- such as the one advanced in (MICHAEL, 1974) and (SCHON and NUTT, 1974) -- might be taken as a "paradigm" of the <u>object</u> (or substantive content) of planning, but not as one which comprises a "paradigm" of "planning itself", that is, a "paradigm" of planning action and professional practice. He attempts to formulate an account of such a "paradigm" of the principal elements in the planning process by rationally reconstructing what planners "actually do", and sees no obstacle in relating that account to the paradigm of mathematical programming which organises

the whole process around a systems view of the substantive issues involved. In this sense, a systems view of cities justifies a systems-analytical programming approach to their planning.

Harris' rational reconstruction of the planning process and its relation to mathematical programming involves: (i) defining the "problem" so as to reconcile variances between ends and means available for their attainment (defining objective functions); (ii) delimiting areas of possible action (defining constrains); (iii) generating a series of alternatives which offer "solutions" to the "problem" (initiating search process); (iv) testing these "solutions" by predicting their consequences and assessing these (modelling the response of the system); (v) selecting some alternative course of action or proceeding to improve some preferred "solution". However, there are difficulties involved in such rational reconstructions of the method employed by a group of professionals in the course of their activities.
The difficulties have been subject to extensive debate in the context of scientific research and "scientific method"; and the various accounts of "scientific method" have been shown not to be independent of particular views of science and ways of looking at the world.

This debate is taken here to be relevant in the discussion of the relations between substance and method of planning, and to justify raising the question: if a systems view of the city is not agreed upon or is rejected, would the logical reconstruction of the method of planning outlined above still be valid? Could it plausibly be maintained that "the method" of planning may be universally established for all contexts? It seems that if one accepts a poly-theoretic view of the subject-matter of planning, in which there are several plausible

ways of looking at the fluid "realities" of urban social-spatial organisation, one is bound to a view allowing for pluralism of methods as well.

Another view acknowledging interrelations of substantive and procedural aspects of urban planning has been advanced by Bolan who contends that "communities possess attibutes which are a function of place, historical development, economic rationale, and social compositions" (BOLAN, 1967: p.235). The possible variations in the social and political environments of different cities suggest that the same version of the planning process may be successfully employed in certain urban environments but unsuccessfully in others. Hence planning method ought to be adjusted and adapted to the particular social-spatial contexts it endeavours to apply. If planning content is taken to denote the kinds of "issues and problems to be concerned about" in planning, i.e. the "scope of planning", "choice of content is not totally independent of choice of method although there are no impediments to discussing them separately" (ibid.: p.242).

In a later work the same author comments on the directions in the development of planning theory since 1968 and identifies two interrelated concerns (BOLAN, 1974: pp.14-15): (i) the question of how facts and values affect one another. The position favoured by some philosophers and accepted by many planners is one which recognises value-ladenness of facts. This suggests that the separation of the empirical, supposedly value-free part of planning analysis from the evaluative, prescriptive, or normative part of planning proposals may not be justified on logical and epistemological grounds. The view taken of the relation between empirical facts and

value judgments will have a bearing on the position to be adopted concerning relations between substantive and procedural aspects of urban planning, between theory and method; theory and practice; knowledge and action. (ii) Indeed, it is by stressing the importance of focusing on the interrelations between human thought and human action that planning theory has made its development felt since 1968, taking into consideration philosophical, epistemological and social scientific arguments.

There seems to be some vagueness in Bolan's writings as to the precise meaning he attaches to "planning theory". Thus, in (BOLAN, 1967) he concerns himself with the "planning process" or "planning style" and takes it to have four principal components: strategy (e.g. disjoined incrementalist or rational comprehensive); method (e.g. the "key-levers" approach, or systems analyses and system simulations); organisational or institutional framework; and planning content (the"scope" of planning) (ibid.: p.237). To the extent that it recognises interdependence between content (substance) and procedural aspects of planning -- and it clearly does so -- this view is consistent with the position accepted in this thesis.

Thus, though not explicitly stated in that paper, the meaning of "planning theory" may be interpreted as encompassing both substantive issues of content, viz. theories of the city or theories and models about the subject-matter (content) of planning, and issues of process such as "strategy", "method", institutional arrangements, social practices, and the like. However, in (BOLAN, 1974) there is explicit reference to the familiar distinction between "theories in planning"(substantive aspects) and "theories of planning (planning process aspects).

Moreover, Bolan declares his concern with the latter type of planning theory which he contrasts with the former. Then he goes on to proclaim his support for the view acknowledging interdependence of values and facts, and relationships between thought and action.

But if such relationships are accepted, how is it possible to discuss "theory of planning" independent of "theories in planning"? How could one justify the distinction between : (i) "theorising" about the city as a thinking process and as a social activity (as suggested by both the pragmatist and Marxian accounts); and (ii) "planning" the city as a thinking process as well as a social process (BOLAN, 1974: p.15), given that it is the pragmatist philosophical outlook, usually unacknowledged, which informs the kind of planning theory that Bolan is referring and subscribing to, viz. the so-called tradition of the "new-humanism". Could it be seriously maintained that the "thinking" (or "cognitive") aspects of the urban planning process are independent of some theoretical conception of urban social-spatial organisation? If the pragmatist outlook provides the philosophical underpinnings for the set of views known as the "new humanism" -- as it evidently does (WILSON, 1975: pp.76-78) -- then the reply to the last question, above, should be clearly negative.

Further, Bolan's notion of a "theory of planning" as one which "centres around what is going on when men plan whether they are planning cities, wars, or industrial empires" (BOLAN, 1974: p.14), that is, a context-independent "theory of planning", may not be intelligibly reconciled with his view of independent knowledge and social context, thought and action. Yet his conception of a "theory of the planning process" does comprise both substantive and procedural aspects of urban planning

in an integrated framework. One probable reason for this apparent, but not real, contradiction may be that Bolan along with other writers, such as (MICHAEL, 1973), (FRIEDMANN, 1973), and (OZBEKHAN, 1969), not all of whom may be said to belong to the tradition of the "new humanism", takes a "process" view of urban planning -- as opposed to the "fixed plan" counterpart of the well-known "plan versus process" antinomy. This presumably compels him to stress the procedural aspects of planning as against its substantive aspects though he acknowledges their interrelation in the planning process.

The position advanced in this thesis takes "theory in planning" and "theory of planning" as inextricably interrelated and impossible to formulate separately without severe loss of meaning and usefulness -- "theory for planning" seems to be an appropriate term for such a conception of theory (BAILEY, 1975: p.vii). However, there does not seem to be any dispute between this conception of"theory for planning" and the process view of planning advocated by the above writers if by "theory of planning" they mean a theory of the planning process which:

(i) views knowledge and planning action as intimately related;

(ii) postulates that knowledge increases the possibilities for deliberate planned action and social change and control, but also increases moral responsibility for actions taken in determining the conditions of social life;

(iii) takes the elements of the process of planning social action to be dependent on some interpretation of a given situation including both empirical and value aspects of it. For it accepts that action is guided by knowledge, i.e. it regards planned social action as founded on a set of rational but fallible and corrigible beliefs about

social-spatial reality, and influenced by some normative conception of how such action would be both most appropriate for the purpose at hand and ethically acceptable.

(iv) accepts that a so-called "substantive" theory of social/spatial organisation (a term which becomes redundant if used by itself divorced from procedural planning theory) is one possible interpretation of a given situation as means to deliberate future consequences under hypothetical or anticipated conditions. It is not a "copy", viz. a geometrical or pictorial representation, or a correspondence, within an agent and of a subject-matter. A theory so conceived would still need to provide some reflection of the world though one which could be the result of an interaction between the world and man's perceptual equipment as well as his needs and interests. For if it did not in some way reflect the similarities and differences to be found in the world it would be descriptively useless and prescriptively unsound.

The crucial point in this discussion appears to be the specification of the meaning of "theory <u>in</u> planning" or "substantive" theory of planning.Nearly all attempts at theory- and/or model-building of aspects of the urban structure and social/spatial organisation have taken for granted some version of the empiricist theory of knowledge based on a correspondence theory of truth. The pragmatist outlook which informs the position of the "new humanist" writers referred to above, is of course strongly opposed to the conception of truth as strict correspondence with value-free facts. Thus, for those writers there is no place in their theories of the planning process for "substantive" theory so conceived. However, there is no reason why "theory" as has been loosely specified above, should not be compatible with the humanists' notion of "theory of the planning process".

Taking planning as a thinking process and planning as a social process to be "the two main axes of a matrix for mapping the planning theory terrain" (BOLAN, 1974: p.15), it is easy to see the contribution of the knower to the known in their interaction: the planner (subject) theorises about various ways of influencing or affecting the object of his inquiries. The mind of the knower can be admitted to be conceptually creative without denying that the conceptual outfit it creates does reflect the reality of the known, viz. the object of knowledge and action, in some way. But the process of acquiring knowledge or rational belief to guide social action is not simply the opposite of the one-way process which the empiricist epistemology postulates and prescribes.

This so-called "spectator theory of knowledge" asserts that rational beliefs about the world are the result of sensory experiences, passively received and then privately elaborated and systematised within the mind. Unlike this one-way movement towards knowledge, inquiry for planning involves interaction between the "object" and its investigators, between the planned and the planners. Thus, at some stage in the process of inquiry (or process of planning) the inquirer/planner must be a "spectator" in order to leave room to the object to do its part. For if it is questioned by inquiring minds, the object of planning still has to provide answers. Failure to appreciate the interaction of knower and known, subject and object, the planner and the planned, will result in inefficient inquiry for it will not be possible to disclose any important, actual traits of the object but only what the inquirer would expect to find or wish to believe. Hence there is some form of a dialectical process involved in theorising for planning.

4. Methodology, research strategy, method, and techniques: some distinctions.

There seems to be some confusion as to the precise meaning attached to the terms "method" and "methodology". Restricting observation to usage in social science disciplines, one discovers that these terms are either used interchangeably, or are distinguished, or are divided into further sub-categories. Thus, Rapoport argues that "no sharp line need be drawn between the meanings of 'method' and 'methodology' "(RAPOPORT, 1969: p.179). This view must be based on a conception of methodology as a body (an aggregate) of methods, research techniques, and sets of procedures developed and applied by a discipline. If this usage is intended, then there may be grounds for employing the terms interchangeably. Kaplan seems to concur to this view. He notes that, although it may be ambiguous to use "methodology" both "for a certain discipline and for its subject-matter", such usage does not "lend itself to any serious equivocations" (KAPLAN, 1964 : pp.18-19). However, the term "methodology" is also employed to denote the process of study and analysis of principles and procedures of inquiry in some cognitive field. It is in this second sense that the term is used in (WEBER, 1949), and by Parsons

(as "the consideration of the general grounds for the validity of scientific propositions and systems of them") (PARSONS, 1937: p.24); while for Merton it is "the logic of scientific procedure" (MERTON, 1957 : p.86).

According to Kaplan, the ambiguity of the meaning of the term "methodology" can be traced in its four different usages (KAPLAN, 1964: pp.18-24) :

(i) "methodology" is often taken to mean inquiry into the potential and limitations of particular techniques (e.g. techniques of multivariate statistics such as factor analysis or multi-dimensional scaling; techniques of interviewing or questionnaire design; and the like), where a technique is a particular procedure employed in cognitive inquiries;

(ii) "methodology" used to refer to "the method of science" rather than to study of specific techniques is often associated with a conscious attempt to convey the image of pursuing scientific rigour in cognitive inquiry in a way which secures the scientific status of the results of that inquiry (Kaplan calls this the "honorific" usage of the term);

(iii) "methodology" employed to refer to a concern with very general philosophical principles is sometimes similar to epistemology or philosophy of science (as used by philosophers), and deals with questions such as the problem of induction, the issue of determinism or free will in human behaviour, and the like, which are approached in a primarily philosophical manner and may have a rather indirect influence on the practice of scientific inquiry;

(iv) "methodology" is taken to refer to the study of methods (and this usage is adopted by Kaplan).

The distinction between usages (i) and (iii) above is claimed to be one of degree. On the one side, philosophical issues differ as to the extent of their significance : while, say, the problem of induction may be important for the whole of human knowledge, other problems, such as the issue of determinism or free will in individual behaviour, tend to relate to particular disciplines. On the other side, techniques differ in scope of application (KAPLAN, 1964: p.23).

The term "method" is usually reserved for a systematic procedure or mode of inquiry applied in order to attain some cognitive end (DIESING, 1971: p.1) : it may be seen as "a pragmatic means of attaining some form of knowledge about the world" (CICOUREL, 1964 : p. 28). For Kaplan, "method" refers to "mid-range" techniques or principles "sufficiently general to be common to all sciences" (KAPLAN, 1964 : p.23). Thus "method" refers to "the technology of research, the actual tools by which data are gathered and analysed; while 'methodology' refers to the logic or philosophy underlying particular mathods" (HUGHES, 1976 : p.6). This distinction seems appropriate and will be adhered to henceforth; and use of "methodology" to denote the body of methods and research procedures of a discipline will be avoided as much as possible.

Some writers distinguish methods of research into "research strategy" (or "research procedure") and "research techniques" (BULMER, 1977 :p.5). The former refers to the research programme or method of approach concerning the carrying out of a particular study and includes

considerations of appropriateness of available research techniques in attaining the objectives of the strategy, and of the synergistic effects of such techniques. The latter refer to the actual instruments of research. However, research strategy and techniques are interdependent : strategy is necessarily limited by availability and appropriateness of techniques, while techniques are selected on the basis of some research strategy. Further, Bulmer differentiates research strategy and techniques from "general methodology" (employed in the sense of a study of logical and philosophical issues of methods). He also notes the interdependence between methodology and methods of research : "Choice of research strategy and research techniques is rarely independent of a general methodological standpoint; conversely, the use of a particular strategy or technique may have important implications for the general grounds for the validity of scientific propositions" (ibid.).

Viewing planning as a process or programme of inquiry,[11] it may be possible to draw distinctions between 'strategy', 'method', and 'technique' in a way which establishes interesting connections with the work of the above writers. One such set of distinctions has been drawn by (BOLAN, 1967). He discerns four components of what he refers to as "planning style", i.e. the type of programme or pattern of inquiry in urban planning. These components are :

(1) Strategy, which is characterised as the means whereby planners endeavour to convince those concerned (e.g. the government, the public affected by planning) that their policy and planning contributions ought to be influenced by information, criteria, and values which they (viz. the planners) are capable of wielding. Thus, the extremes of compulsion and voluntarism as 'strategic' principles delimit

a spectrum of options, and it is likely that a strategy-mix leaning towards the voluntarist principle would be more appropriate for Western liberal democracies. Within a voluntaristic framework based on incentives there are several ways of articulating strategy of planning; for instance, disjointed incrementalist, advocacy and pluralist, or adaptive and contingency approaches.

(2) Method (or "scheme of logic") stands for the mode of reasoning involved in studying the subject-matter of the field. It might range from forms of individualising studies focusing on partial and limited analyses, to forms of holistic or comprehensive explorations taking in all conceivable interdependencies and striving for their integration into a meaningful whole. Thus, a method of planning might place emphasis on quantification and mathematical expression of concepts or it might stress qualitative aspects of the object of planning -- such as natural beauty, social harmony, and the like -- according to some utopian vision of these. It might favour daring and long-term thinking or present reserved and experimental programmes subject tc revision after careful monitoring of their implementation. It might focus on the political process for guiding decisions and on the design and management of institutions or opt for the use of future end-state plans in terms of physical arrangements in urban space as the key instruments for effecting decisions. Some methods that have been used more or less successfully in urban planning are : (i) systems simulation by way of models of the urban system as a whole or of particular subsystems -- these are actually seen as "techniques" of comprehensive or holistic planning disguised in technical terminology; (ii) the "key-levers" approach which derives from Keynesian principles of economic management : key areas of the object of planning are identified and managed leaving the remaining aspects to social choice;

(iii) so-called "ad hoc opportunism" involves proceeding not on the basis of some plan but by seizing individual opportunities for action as they emerge, without concern for effects outside of the action areas.

(3) Organisation refers to the political and institutional framework within which decision making for urban planning purposes takes place -- the position of the planning function within the administrative structure.

(4) Content of planning denotes the "scope of its subject-matter", that is, the kinds of issues and problems to be taken into consideration in the planning exercise and for which solution and/or regulation is sought. Isssues pertinent to content are said to revolve around the kind of time-scale of the planning undertaking, the nature of the relations between the means available and the ends set, the attitude towards information (selectivity versus comprehensiveness), etc.

Now, the following kinds of relations are postulated to hold between components of the process of inquiry of urban planning : (i) choice of method is independent of, but yet affected by strategy of planning. Thus, some strategies might be compatible with any method; others would be appropriate only in conjunction with some particular method. For instance, the strategy of disjointed incrementalism would be logically opposed to the holistic, comprehensive methods of the systems approach for it favours partial, atomistic, individualising approaches and reasoning. (ii) interdependence is acknowledged in the choice of method and choice of content of planning, although these components may be discussed separately.

Some remarks on these views on strategy, method, organisation, and

content of urban planning are in order at this stage. Components, 1,2, and 3, above, refer to so-called procedural aspects of urban planning representing what may be termed the "method of planning"; while the content component refers to the substantive aspects of the field. Strategy concerns some broad methodological principles involved in approaching the object of planning. It is based on a set of assumptions concerning the nature of the object of planning, which derive from some way of looking at urban social-spatial organisation. Thus, from considerations about the kinds of moral, political, etc. values that some particular society finds -- or ought to find -- acceptable or desirable it would be possible to argue that a planning strategy based on the principle of voluntarism and the instrument of incentives should be more appropriate than a strategy which employs compulsion by means of strict state control.

This entails a way of looking at society which distinguishes it from the state (the government, the executive or administrative branch of the state) as opposed to the view which seeks to obliterate the differences between them. A society could be seen to differ from the state in a number of important ways : it is a collection of individuals who interact cooperating and communicating with one another and their social activities are persistent and characteristically human; it will persist only if there are generally accepted rules of conduct but these do not have to be enforced by any centralised agency. Compatible with such an account would be the emphasis placed on individuals and their freedom of choice and action which would, in principle, be the overriding consideration in a planning exercise against approaches which take the city as an indivisible whole, with properties which go beyond the properties of its component

parts, and set out to study and plan changes for it in a comprehensive, holistic manner, guided by some normative view of the "ideal city".

Moreover, strategy is constrained by the nature and availability of methods for carrying it out as well as by considerations of compatibility of such methods with the strategy. Methods themselves are based on presupositions, more or less explicit, regarding the nature and constitution of the object to which they intend to apply. For instance, a method which stresses quantification and mathematically expressible relations presupposes that the nature of the subject-matter of planning is such as to permit the necessary quantification -- including those aspects which many writers take to be irreducibly humanistic, exclusively qualitative, and hence unquantifiable. Such a quantitative method may foster a scientific, as against a particularly humanistic, way of looking at urban social-spatial organisation and thus directs the perception, interpretation, and ultimately the organisation of its subject-matter. It may possess both problem-solving and cognitive characteristics and, in this sense, it may be differentiated from technique which might be employed with a narrower meaning to denote the systematic, instrumental means for attaining specific objectives (TEITZ, 1974 : pp.87-88).

General methodological viewpoints may not be independent of the subject-matter of planning, that is, of ways of looking at urban social-spatial organisation. Thus, there is clearly a level of discussion regarding strategy, methods, and techniques of urban planning which may be referred to as "general methodology" and which deals with the issues concerning the logical and philosophical presuppositions involved in various methods in relation to

subject-matter. Choice of strategy and methods of inquiry in urban planning is rarely independent of some general methodological stand which often is taken for granted and remains unacknowledged. Such methodological position is closely dependent upon the nature of the political and administrative framework which is prevalent in particular situations and which tends to reflect cultural, historical, and structural (political, socio-economic) characteristics of the society within which it is articulated and legitimated.

Methods include such procedures as observation and measurement, concept and hypothesis formation, theory accretion, model building, prediction, etc. The purpose of methodology is to describe and analyse such methods, to discover their effectiveness and limitations, to expose their implicit presuppositions and their consequences; in general to aid in the understanding of the <u>processes</u> of scientific inquiry and not its <u>products</u> (KAPLAN, 1964 : p.23). Although pursuance of methodology is neither necessary nor sufficient for successful results in scientific research, it can enhance inquiry by removing ambiguities and making practising scientists more aware of the scope and limitations of their methods. In this sense, methodology is seen to offer recommendations rather than strict prescriptive rules for practising the game of science: adherence to these is not mandatory at the penalty of expulsion from the scientific community.

This view of methodology as an instrument of advice rather than a normative framework for practising science certainly affords greater flexibility in scientific inquiry and helps to shift its focus from <u>form</u> (method) towards <u>content</u> (substance); thus emerging as an improvement on the Logical Empiricist [12] thesis on methodology as

the "logic of science" or "scientific method". In this latter view, the logic of science, based on methods and principles of formal logic, is both an adequate description of the process of scientific inquiry and a prescriptive account of how science ought to be practised. Although this account of "scientific method" has infused more clarity and precision of thinking, it has also contributed to the cultivation of a "myth of methodology", especially among practising social scientists : "that it does not much matter what we do if only we do it right" (KAPLAN, 1968 : p.394). This comment seems to be applicable to many situations in urban planning where emphasis on method and technique tends to overshadow substantive considerations and the attempts to intuitively, and if possible, sympathetically interpret the problems facing the city, but also its human inhabitants.

5. Philosophical versus methodological approaches to studying methods of inquiry : can these be reconciled?

The general problem of the relation between philosophical and methodological approaches to the study of methods of scientific inquiry is discussed in (HARVEY, 1969 : Ch.1) whith reference to the context of geography. The discussion seems to be germane to analogous, though not similarly defined problems in the field of urban planning, notably the issues revolving around the distinction between procedural and substantive aspects of the field. A discipline is seen to be characterised by both a <u>set of objectives</u> of study, laying down the range of subjects that should and could be dealt with within the

disciplinary boundaries, and a method of study which consists of rules, rational principles, and techniques of research for the attainment of the cognitive objectives of the discipline and the legitimation of the knowldge so acquired. The objectives of study within the discipline are founded on some system of beliefs which might be called the "philosophical" foundation of the discipline.

To the extent that different such systems of beliefs are conceivable and may be subscribed to, a number of corresponding philosophical outlooks are also possible which would have a bearing on the cognitive objectives of the discipline or field and would provide differing, often conflicting accounts of the field. Choice of one system of "basic beliefs" in preference over all others would seem to be founded on considerations pertaining to esthetics and axiology rather than be the "objectively" justified outcome of the application of one of many possible versions of the "method of science". Thus, it is accepted that social and cultural factors tend to influence to a greater or lesser extent, and often determine, beliefs and ways of thinking.(13) Philosophers appear to defend the truth of particular sets of beliefs about the world and to reject alternative sets as false. They may "either stress the role of the mind in the generation of knowledge, or minimise it and emphasise instead the external constraint of the world itself, or the sensuous given, or the data of experience" (BARNES, 1974 : p.8). They may also view the production of knowledge as an interchange between the external world and the structures that are inherent in the human mind, or the social and cultural (underlying) structures which influence and often determine beliefs and ways of thinking and looking at the world.

As concerns the method of study of the subject matter of the discipline, it is the task of the methodologist to establish sets of criteria for assessing what is to count as legitimate knowledge in the field. Such a task is claimed to be related more to the "logic of justification" rather than to philosophical considerations with regard to some underlying system of beliefs which suggests a particular way of looking at the subject matter of the discipline. Consequently, this is a different task from that ofthe philosopher. Writers such as (BRAITHWAITE, 1960 : p.21) and (RUDNER, 1966) have drawn attention to important differences between a methodological and a philosophical approach to the study of scientific methods;(14) while Kaplan argues that a philosophical study of methodology usually affects the practice of scientific inquiry only indirectly (KAPLAN, 1964 : p.20-23).

It may be argued that a methodological position inevitably entails a corresponding philosophical position : that, for example, employing a method of cause-effect analysis could only imply a deterministic view of the world. There can be no doubt about the interrelationships between philosophy and methodology although the influence of the former upon the latter need not always materialise as pervasive as it is anticipated 'prima faciae'. The methodologically oriented practicing scientist may adopt a view on methods irrespective of his view of science (his philosophy), simply because the mode of analysis it represents is more effective or more convenient (or both) in achieving specific research targets. His criteria are often more <u>pragmatic</u> or <u>instrumental</u> in comparison to those of the philosopher. Use of, say, a stochastic model to investigate the interaction between certain classes of phenomena need not suggest that this is the only appropriate method of studying a specific type of relations; nor does

it suggest that the scientist has eliminated the alternative of using some deterministic mode of analysis, should the latter prove more appropriate for his purposes.

In contrast to such "methodological pluralism", the philosopher would tend to recommend some method of analysis that corresponded to his philosophical outlook with respect to the domain of phenomena that interested him. Adoption of a language that takes account of indeterminacy in human behaviour would tend to be the choice of approach for the philosopher whose position emerges in favour of, say, free will. Thus he would discard deterministic modes of analysis for reasons of consistency with the philosophical view he espouses. However the preceding statement is an idealised reconstruction, and in practice the philosophical approach seems to be less rigid to that presented above. Philosophers may well accept some analytical approach as a better approximation to explanation in comparison with the one that corresponds directly to their views of science.
A notable example of this is illustrated by the case of Laplace who, though holding a deterministic view of the world, developed the calculus of probability to account for human ignorance about certain types of phenomena and to provide some means of analysing them in a way which approximated reality more closely than any deterministic method (HARVEY, 1969 : p.7).

However the independence of a methodological approach from the philosophical implications of the methods of inquiry should not be overemphasised. The decision to place an emphasis on methodological issues rather than on philosophical ones in the ensuing discussion of the "method of science" is based on mostly pragmatic considerations.

This approach has the advantage of convenience of analysis but may entail dangers in its separation of procedure from content of inquiry, and its assumption of neutrality of methods towards broad philosophic matrices or ways of looking at reality, which may underlie scientific research and influence the development and choice of methods employed to master that reality. To deal with the anticipated advantages first, this is a convenient approach because it seeks to limit discussion to issues directly relevant to method and avoid expansion to considerations pertaining to the universe of philosophical discourse which would lie outside the scope of the present work. But this may be a trivial and easily refutable argument. The main benefit of such an approach would be the high degree of flexibility which it affords in the study of investigative procedures and strategies of inquiry. Commitment to one of the currently held philosophical conceptions of science and scientific practice would tend to restrict the flexibility of methodological analysis by imposing some specific framework which prescribes methods and principles of inquiry and the roles to be played by these. In contrast, the study of methods from a philosophically neutral point of view would make it possible to examine the circumstances in which methods are used, to investigate and establish the assumptions that are involved in the application of methods, and to formulate the analytical structure that must be adhered to in such applications.

It could be argued that such advantages accrue only if methods are viewed as mere instruments or computational devices which are employed because they usually give satisfactory results in the pursuit of some cognitive objective, independently of substantive content of the subject matter to which they are applied and irrespective of philosophical

presuppositions concerning, say, the nature of experience and perception, the nature of language, etc. Further, that such a view of methods of inquiry is itself based on some philosophical outlook; and that the claim of a philosophically neutral (and theory-neutral) methodology is, therefore, self-contradictory. This argument seems, at best, to reduce the validity or, at worst, to provide strong reasons for rejection of the proposed approach. But this need not be so. The methodological approach emphasised herein need not endorse the sweeping claim of independence of form from content of inquiry; in fact it is not meant to do so. All it needs to accept is that at least some procedures of scientific inquiry may be common to a number of disciplines. Moreover,this approach gives full recognition to the interdependence of philosophy and methodology and is intended to consider their interrelationships wherever they become relevant.

6. Some arguments from the "newer" philosophy of science: paradigms, research programmes, theoretical and methodological pluralism, proliferation, and anarchism.

The view that science owes its success to using a special method, and that scientific research can be characterised and demarcated from non-scientific activities by the fact that it involves the use of this method explicitly and consciously, reflects a scientific world outlook which recently appears to be losing the support it previously commanded among both philosophers and scientists. Discussions

in contemporary philosophy of science, but also the actual practice of scientific research, seem to be moving further and further away from the long established view that the sciences keep increasing and accumulating knowledge of the structure and constitution of the world by employing "the method of science"; and that if such methodical, systematic search for knowledge continues over sufficiently long time it should be possible to discover everything that there is to be found out in the world.

Furthermore, the account of science which takes it to provide objectively true descriptions of the way things really are has been challenged by many contemporary thinkers. The belief that there is a realm of absolute, theory-neutral facts which simply dictate the content of scientific theories about the world, and that the notion of truth is simply correspondence to reality is being contested by the view -- which in its original version was put forward by Kant -- that theories are not just copies or pictures of the real world. Rather they include the contribution of the human mind without being wholly fictitious, that is, they do fit the world in some very basic way. Thus, what is called truth is seen to depend partly on what there is in the world (the external facts) and partly on the contribution of the intellect (the categories and ways of looking at things which come from the observer). In this sense, there may be alternative ways of describing the same set of empirical facts which yield both true and adequate descriptions of them, so-called equivalent descriptions. Moreover, not only is reality viewed as partly mind-dependent, but also the concepts applied on it by the scientist may prove to be wrong ones and may have to be altered in the process of interaction between human contribution and experiential evidence.

The intrusion of many "subjective" elements in scientific inquiry need not result in a characterisation of science as a wholly subjective enterprise. It is recognised that there is good and bad reasoning but there is no mechanical rule for deciding about it. Many of the terms employed in scientific inquiry and in everyday life are interest-loaded in the sense that they presuppose particular ways of looking at the world and theories about it. For instance, applying the term "town planner" to an individual makes no sense unless one is familiar with a whole framework of social institutions that provide for the activity known as "town planning", i.e. it is seen as useful or even necessary to employ the services of "town planners" -- rather than do without -- as individuals who perform roles that are consistent with the purposes of that activity. This in turn, presupposes a way of looking at the city and the people who live in it which takes it to present social and environmental problems that are identifiable, corrigible, and essentially avoidable through anticipating and consciously planned social action. Now, an observer who is not acquainted with such an institutional framework and the social and spatial theories it presupposes might characterise the town planner, after observing him in his activities, as say, "the man who caused my house to be demolished", or "the man who says I ought to drive around rather than through the city centre", and like. However, even if the notion of "town planner" is so affected by interests, values, and theories, there does not follow that it is impossible to state objectively that that individual is, in fact, a "town planner".

Strong arguments have been advanced suggesting that "normal" scientific practice is governed by some paradigm which "stands for the entire constellation of beliefs, values, techniques, and so on shared by the

members of a given community" of scientists (KUHN, 1962/1970 : p.175). In this view, research is a puzzle-solving activity : scientific problems are solved within the framework of assumptions implicitly or explicitly embodied in the paradigm. The latter guides the search for answers to questions such as : "What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may legitimately be asked about such entities and what techniques employed in seeking solutions?" (ibid.: pp.4-5). Thus, it appears that the paradigm which is accepted by some community of scientists performs the dual role of prescribing a set of appropriate rules of method for pursuing the cognitive tasks of a scientific discipline, and of prescribing the nature of the subject matter of that discipline, in the sense that it suggests a way of looking at the world, to which these rules of method may be legitimately applied. By arguing that scientific standards and methods are relative to paradigms this view denies the claim that the sciences embody a single set of procedural and methodological conventions in their pursuit of "true" (as opposed to "relative") knowledge of the world. The latter claim is put forward by writers such as (POPPER, 1959/1972).

Kuhn's concept of "paradigm" bears close relation to Imre Lakatos' notion of "scientific research programmes", as explicitly recognised by the former author (BUCK and COHEN, 1972: p.138). The notion of a "scientific research programme" is not a very precise one -- though it is not certain that it was originally intended to be a precise one. A scientific research programme is seen as a sequence of theories. These occur within the 'context' of the research programme and must possess a certain continuity for them to constitute a single such

programme. Lakatos' arguments draw on the history of science. Scientists are viewed as tending to maintain support for a theory even if they are unable to explain away anomalies in it. On Popper's account (POPPER, 1959/1972) scientific knowledge advances through continuous attempts to refute scientific theories; and theories so refuted are eliminated while those that pass falsification tests are accepted as presently sound but corrigible in the light of subsequent tests.

Now, Lakatos argues that such discarding of single theories which failed to pass falsification tests does not occur in actual scientific practice. Rather, scientists tend to appraise sequences of theories and not individual ones. Decision on whether or not to abandon a refuted theory will depend upon the extent of the increased explanatory power of a new, slightly different theory which is derived by modifying auxiliary assumptions in the original theory in order to save it. Thus, a scientific research programme is adjudged as good if later theories in the sequence contain excess corroborated empirical content over earlier ones. Anomalies deriving from false empirical consequences of earlier theories have to be tolerated until eventually settled and explained, lest science be rendered totally sterile. For if Popper's account was adopted, it is argued, most research programmes would have been abandoned before giving any concrete results (LAKATOS, 1969); (LAKATOS, 1970). Lakatos' methodology implies theoretical pluralism and proliferation : the so-called polytheoretic model of science which is contrasted with the "mono-theoretical" model of criticism or "naive falsification" advanced by Popper (DIXON, 1973 : pp.16 ff). This view seems to go beyond Popper's account in which plurality of theories is also

advocated but only for heuristic purposes in the sense that "we need a new theory in order to find out where the old theory was deficient" (POPPER, 1963 : p.246).

If Kuhn's work seems to reject much of the received view of "scientific method", the writings of Feyerabend make much stronger claims in which all methodological doctrines and principles are taken to be false (FEYERABEND, 1970); (FEYERABEND, 1975). Since the real advances in knowledge contradict all methods available to the scientists "there is only one principle that can be defended under all circumstances, and in all stages of human development. It is the principle : anything goes" (FEYERABEND, 1970 : p.26), which reflects an anarchistic attitude towards scientific research. On this account, the scientist should proceed by relying not on universal rules, standards, and methods, but upon "esthetic judgments, judgments of taste, and (his) own subjective wishes" (ibid., p.90). However, the availability of the option of conducting scientific inquiry in a rational and objective manner is not denied; only the selection of that option is claimed to be an inappropriate one for the scientist who values human freedom and individuality (ibid., p.21). Obviously, adherence to this view would render the ensuing discussion of "scientific method" redundant. That the discussion is developed, however, should not be taken to imply rejection of Feyerabend's thesis.

The main arguments in Feyerabend's thesis derive from his drawing on examples from the history of science -- a practice to which Kuhn and Lakatos also resort -- but in a way which does not expose him to the charge of historicism. His general conclusion from the study of historical cases of scientific discovery is that all available

theories of scientific method cannot account for the real advances of knowledge which always contradict logical reconstructions of method; and that there can be no rules which describe good scientific practice. Although he does not offer any explicit argument for the latter claim, he makes a number of criticisms of common methodological principles (KOERTGE, 1972 : pp.281-282). He contends that these show that all methodological doctrines or principles are false, not because existing accounts of scientific method are not satisfactory but because any principles of method could never be good enough. The difficulties involved in discriminating between general methodological principles and criteria of truth indicate that distinction between good and bad methods is not possible and that it is also impossible to distinguish between good and bad substantive theories. There follows that proliferation of theories ought to result in the emergence of certain good theories.(15)

Theoretical pluralism is recommended not only because it is seen as essential for the growth of knowledge, but also because it might oppose psychological dogmatism and institutional rigidity which, as potential consequences of a mono-theoretic view of science, would be inappropriate for a free individual to use. In this sense,Feyerabend raises questions about the direct human consequences of adopting a certain scientific method. He asserts that "the happiness and the full development of an individual human being is ... the highest possible value" (FEYERABEND, 1970) and seeks to so characterise scientific practice as to facilitate this aim. Moreover, he argues that being concerned with truth and the uniqueness of truth should not be the principal goal of scientific inquiry; for in man's intellectual and cultural activities there are many aims more

important than truth. That pursuance of the single ideal of "truth" is not the only aim of human activity is a plausible contention which other writers have arrived at through different chains of reasoning (GELLNER, 1975 : p.335). Feyerabend offers two additional arguments in support of this contention.

Firstly, unlike the pretensions of different theories of knowledge, the vision of a coherent, clear, and stable intellectual world is said to be only a façade: ideological stands tend to influence beliefs which take that world to be coherent and rationally preferable to any other way of looking at it. Given that the world is complex and difficult, almost anything might contain some truth (ibid.). Secondly, the multiplicity of existing, incommensurate cultures and values in the world makes it exceedingly difficult to choose between rival views. For instance, the claim that one such culture, viz. science, is superior to others is not to be taken for granted. For each culture comprises, and internally legitimates, its own world view and cognitive norms and conventions. Further, it is very difficult or even impossible to justify basic beliefs upon which world views or ways of looking at the world are founded. However, adopting a liberal attitude toward different cultures entails cognitive relativism. Apparently, Feyerabend does not worry about the usual arguments against the rather extreme relativism that his position entails. All these considerations lead to Feyerabend's suggestion that a position of epistemological anarchism (which is different from scepticism) should be seriously considered as a foundation for scientific inquiry which "opposes positively and absolutely ... universal standards, universal laws, universal ideas such as 'truth', 'reason', 'justice', 'love'..." (FEYERABEND, 1975 :

p.189). Thus, the scientist ought to lend support to or put forward even the most trivial or outrageous statements.

The arguments involved in this position are put forcibly by Feyerabend though perhaps not flawlessly as his critics comment (GELLNER, 1975); (KOERTGE, 1972). While one may not subscribe to the brand of methodological and epistemological anarchism advanced in that account, one inevitably comes to recognise the risks of artificially imposed restrictions and premature closure in scientific inquiry which may result from dogmatic application of some formal and rigid account of scientific method. Maintaining a sceptical outlook regarding such accounts of method and theories of knowledge seems to be the most intelligent approach. In this respect, Gellner presents an eminently tenable view in asserting (GELLNER, 1975 : p.334) : ".... doubt whether any methodology can fully capture the complexity of the transition from one theory to another, or from one style or paradigm to another. The transition will always hinge on the c o n t e n t of the theory or paradigm, which of course must be ignored by an abstract and general theory of method, meant to be applicable impartially to all such advances (of knowledge). On the other hand, theories of scientific method c a n do the important job of singling out worlds amenable to science from those which are not. This is important because not all worlds or thought-styles are amenable to science". Moreover, theories of knowledge (epistemologies) are seen as (ibid. : p.336) : "....irrelevant to the manner in which s p e c i f i c cognitive advances are reached. Their real use lies in helping us make inter-cultural comparisons. A culture which subjects its cognitive capital to testing by arbiters w h o a r e n o t u n d e r i t s o w n c o n t r o l, seems

to me superior to one which does not do so. Epistemological theories thus give us some insight in how to choose between whole styles of thought. But I do not expect them to apply mechanically to individual discoveries or advances, even w i t h i n the culture which as a whole, satisfies this or that epistemology".

The preceding comparatively long reference to recent work by Feyerabend was introduced not only because his is seen as a radical, almost heretic, and widely debated position in the context of the philosophy of science, but also because his views appear to be connected with aspects of social and political theory.(16) The connections are only obliquely indicated but may be identifiable in the context of "Against Method". The main issue seems to be whether or not one ought to adhere to rules of rational scientific practice given that there may be certain direct human consequences of adopting a particular scientific method. The approach of theoretical pluralism is proposed because it is taken to enhance "the happiness and the full development of the individual" and thus to be most appropriate for a free individual who rejects the dogmatism and rigidity that sole pursuance of the elusive ideal of "truth" might impose on him.

The potential icompatibility between the quest for scientific "truth" and the pursuit of individual happiness would suggest that it is worth exploring the possibility to replace a world in which science, in its present form, is the dominant outlook with one in which science so conceived plays no role whatever. Feyerabend "ventures to suggest" that the latter choice would afford a world "more pleasant than the world we live in today, both materially and intellectually" (FEYERABEND, 1970 : p.90). His account of the reasons why

contemporary technological society causes concern about the quality of life, in general, indicates that the present scientific world outlook is the main problem-generating agent. The view of science which he attacks tends to cultivate the attitude of rationality, especially in terms of constructing rational arguments and formal methodological principles of scientific inquiry.

Rationality in the formulation of social policies may simply follow some given distorted view, legitimated by government, to its 'rational' conclusions and suggest, say, embarking on a programme of weapons development whose consequence might be human extermination. Rational arguments could also be seen as largely ineffective for it is frequently the case that one has to adopt a radically different approach, belief, or way of looking at things that lies outside of the context within which such arguments are advanced. Moreover, inducing agreement among individuals regarding social policies through rational arguments is a potentially harmful process for such arguments are effective only with rational individuals. Now, an individual who can be said to be rational is "specially prepared"; has been "conditioned in certain ways"; his "freedom of action and of thought has been considerably restricted" (FEYERABEND, 1970 : P.101). Thus, the ideology of science may be seen to promote an attitude of rationality which itself conditions individuals into ways of thinking and reasoning that are compatible with that attitude, without their seeking to discover whether there are other more appropriate ways of pursuing answers to the same questions.

The sketches of the two possible, mutually exclusive worlds drafted by Feyerabend and claimed to reflect the options open to man indicate

close connections between epistemological and methodological stands, on the one hand, and social and political theories, on the other. Either way of conceiving of the world features its own epistemology and cognitive strategy. The prevailing view of the world, which the conventional conception of science presupposes, is one which takes the uniqueness of truth as an ideal to be pursued by science, and falsity and error to make a strong presence in the stock of existing claims to knowledge of the nature of the world. Pursuit of truth is seen to be reinforced and directed by method. Epistemological and methodological conventions constrain the range of statements and propositions which are eligible for testing and criticism as making serious claims to knowledge of the world. In this world view, not "everything can go". In contrast, the "alternative" view of the world, which is advocated by Feyerabend, appears as providing greater opportunity and variety for the fulfilment of essentially free human beings. This allegedly superior, radically different view challenges the rigidity and dogmatism of epistemological and methodological conventions which are seen as restrictive of human freedom, personal expression, and pursuit of human ideals other than "truth", and offers an alternative epistemology culminating in the tenet "anything goes" which presumably brings about emancipation from the intellectual oppression of the conventional conception of science.

It is not possible, within the confines of this thesis, to evaluate these "sketches" and the claims about either of them put forward by Feyerabend. As stated earlier, the reason why they are discussed here is that the way in which the principal issues are handled indicates certain linkages between an epistemological and methodological stand and social and political theory. This issue

is seen as highly relevant to the context of acquiring and validating knowledge of the world to be employed in the development of social policies and programmes of planned action addressed to regulating and reshaping the urban environment as well as the organisation of human activities in it. It is thought that there are resonable grounds to suggest that the contention about connections between ways of acquiring knowledge and ways of looking at and planning society should be explored. The question regarding whether or not an epistemological and methodological outlook impinges upon the way in which society and its political arrangements are viewed as well as upon the style of planning that is seen as most appropriate in relation to such a view of society is taken to require careful consideration. For instance, it may be argued that there are connections between, say, the positivist epistemology advanced by Auguste Comte and social theories reflecting a conservative attitude in terms of political arrangements (BENTON, 1977 : Ch.2). Linkages may also be said to exist between Popper's epistemological doctrines of falsificationism and critical rationalism and his theory of the "open society" (POPPER, 1945/1966).

It is perhaps, significant that Popper's social and political philosophy is actually criticised (by Feyerabend) for its deriving from extension of his views on a range of epistemological and methodological problems (FEYERABEND, 1972). The latter author does not sketch a general social and political theory in his own writings although there are suggestions in his work for a starting point in such a theory, consisting in J.S. Mill's general approach combined with so-called "practical anarchism" (ibid. : p.108). However, Popper's social and political views occasionally appear at variance

with his epistemological and methodological stand. Thus, in his discussion -- and rejection -- of utopian, holistic (i.e. comprehensive) planning or social engineering Popper comments that the required comprehensive descriptions of what would make individuals as a whole happy cannot be agreed upon by all.

Thus, on this account, adjudging different accounts of what goals are to be pursued in particular social planning undertakings ought not to be effected by applying the methods that are employed to assess claims to knowledge advanced in the context of the sciences. Moreover, the transition from Popper's discussion of method in natural science to method in the social sciences is characterised by certain shifts in emphasis. Thus, the principle of testability is combined with relative flexibility as to the kind of theoretical entities to be accepted in the theories of natural science; while in social science, reliance on piecemeal social engineering and methodological individualism are directed by concern with practical social problems (POPPER, 1945/1966); (POPPER, 1957/1961).

Notwithstanding such differences in emphasis, Popper's social and political theory may be said to be intelligibly connected with both humanistic and epistemological and methodological considerations, but cannot be correctly claimed to derive from his philosophy of science -- though it does appear to be consistent with it. For instance, in his philosophy of science Popper asserts that the aim of scientific research is to eliminate the false rather than establish the true which lies at an infinite distance. Correspondingly, in his political and social philosophy he views planning, in the form of "piecemeal social engineering", as the

means to eliminate the bad and the problematic from social arrangements rather than establish the good or ideal state, and by extension the ideal environment.

It is thought that the nature of the connections between a particular epistemological and methodological viewpoint and some system of beliefs about and way of looking at society and theorising about its social, political, planning, etc. arrangements may not be said to be impermeable and logically necessary. The latter claim is made by writers of the Frankfurt school who maintain that they have discovered such connections between what they refer to as the positivist epistemology and the specific political and ideological character of the social theories -- allegedly conservative -- that are developed under the influence of such an epistemology (MARCUSE, 1955). However, it may be possible to establish such connections subject to postulation and acceptance of certain hypotheses regarding social theorising. For instance, it may be contended that the social theorist as well as the planner is a member of a scientific or professional community and a member of a social class or stratum. Like other such members, he understands his position in that community and in society in terms of common-sense thought and beliefs. Such common-sense thought may be seen to have embedded in it categories which both disguise and justify certain aspects of the existing social and scientific order and thus affect the way society is looked at.

Regarding the urban planner, in particular, it could be argued that he is taught and learns to perceive urban problems and to seek solutions to these within some generally accepted way of looking

at the city. His perceptions are related to his sub-culture and the training it has offered him, as well as to the society's common-sense thought and beliefs. Moreover, he is amenable to further differentiation within his sub-culture for he is normally trained in some other discipline prior to becoming involved in the field of urban planning: an architect/planner would tend to have a different view of the problem than, say, a geographer/-, economist/-, or sociologist/ planner. Each of these sub-cultures is characterised by certain special traits, emphases, and interests that are exclusively cultivated within it. The modification of perception -- of, say, urban problems, or of perception in general -- by disciplinary training does not seem to be entirely, or even mainly, a matter of learning verbal categories in order to "impose" upon experience. More importantly, there are certain accepted models of "right" perception within the discipline, and exposure of the planner to these affects his way of looking at the world. He learns to see the city and its social/spatial organisation, both synchronic and diachronic, in the way indicated by his training and the illustrations, diagrams, and learned papers in the relevant disciplinary literature. There follows that whatever he perceives in the world of his interests is never a matter of passively monitoring and becoming aware of the world.

The urban planner as : (i) a perceiver of problems, of interactions and interdependencies, of environmental features such as outstanding natural beauty, amenity, etc. ; (ii) a member of a sub-culture with its own orientation towards the city, but also with further differentiations within it; finally (iii) the planner as one of the members of a society with its culture and commonsense thoughts and beliefs which have filtered through and shaped the planner's

own culture; that is, the planner and his culture are actively involved in the process of his becoming aware of aspects of the world even before perception generates belief. The natural tendency to accept sense impressions and experiences as objective givens and indubitable facts unaffected by social, cultural, historical values and norms can be said to be overriden by an equally natural requirement for an uncluttered and methodical system of beliefs which provides the basis for plausible, well-structured and easy to handle narratives about aspects of the world. Hence cultural norms come into operation to define what is to count as experience and sense impression in the world, and thus affect the definition of problems and the way solutions to them are sought.

This is essentially an epistemological issue which is often dealt with in contemporary discussions of what is to count as knowledge and how claims to knowledge are to be assessed. There seems to be an increasing acceptance of the view that sense impressions (the data of experience) are capable of great variation between individuals and sub-cultures as are the ways problems are looked at and defined (HANSON, 1958); (KUHN, 1962/1970). Seen in the context of urban planning, such views -- so-called relativist -- merely assert the role of the culturally given in a field of endeavour which is concerned with acquisition of knowledge of aspects of the world and with the putting it to practical use. These views further indicate the absence of any clearly delimited boundary separating fact from theory and thus make it important to try and develop ways of understanding the wide variation in beliefs about the world of man and society and their way of life in the city, and the wide variation in the perception and definition of problems to be solved and in the policy

recommendations that are advanced as "solutions" to those problems.

If such views are accepted, then the "orthodox" view of objectivity and uniqueness in the definition of problems has to be adjusted to allow for variations in perspective stemming from cultural elements of the perceiver and a host of other interests. The notion of alternative solutions to one and the same problem must yield to alternative interpretations of problems for which alternative solutions are to be sought. The emerging picture of interdependence between questions of belief and questions of knowledge should be more acceptable in the context of urban planning than in the realm of natural science where it is being originally conceived. For the orientation of urban planning is much more interpretative regarding its subject matter and the problems inherent in it, and normative in its conception of prescriptive policies as answers to those problems, than the natural sciences may be claimed to be in their endeavours to interpret the world of nature.

Variations in belief systems and the ways in which beliefs are maintained and changed may be discussed without taking some specific view of what is to be regarded as "true" -- viz.whether it is that which corresponds to "reality", or that which works in attaining the goals of the inquiry,or even that which coheres with some broader "frame of meaning" or cognitive context -- or on the most appropriate method of assessing claims to knowledge. It is possible to maintain views which postulate a sharp distinction between issues of belief and issues of knowledge, and equally possible to claim that questions of belief and knowledge are intimately interlinked. Although the decision to separate these questions cannot be conclusively argued

against and rejected, the contention that issues of belief are distinct from issues of knowledge does seem to render epistemological positions dogmatic and more or less arbitrary. Further, it tends to weaken their importance in relation to pervasive theories of beliefs. Thus, despite the impossibility of claiming that systems of belief logically entail corresponding epistemologies, it seems reasonable to argue that they may suggest theories of knowledge. Hence, such connections as there may exist between systems of beliefs and of knowledge ought to be given attention and properly investigated.(17)

A system of beliefs might mean different things to different people. It might include the most basic ideas about the nature or "essence" of things in the world, often referred to as "basic ontological assumptions", which guide the way things are looked at and the cognitive activities that take place within some paradigm. In this sense, it would provide generally accepted directives on what to regard "real" or "ideal" and on whether these could be related; it might exclude religious, metaphysical, mystical, cultural elements from what could be taken as knowledge of the world; it might express an unquestioning faith in the powers and capabilities of a scientific attitude in settling all conceivable problems, both in the world of nature and in social life; it could even proclaim that beliefs as such should be eliminated from scientific thought and that claims to knowledge should be limited only to those that can be tested against empirical facts.

Systems of beliefs so conceived are fundamental in the formation of paradigms of thought or ways of looking at the world (FORD, 1975: Ch.2). Sometimes they are not distinguished

from the commonsense beliefs involved in man's everyday life, such as social conventions and norms, cultural traits, moral and ethical principles and values. In this sense, systems of beliefs would include the individual's ideas about himself and others and about natural objects as well. These beliefs would guide his actions and support his social role as ways of coping with the social and natural conditions of his life. They would be invoked to justify both to himself and to others his particular way of life and conduct, and would thus enable him to continue his life as he wills in view of the situations which he encounters.

An individual's system of beliefs is thus essentially interlinked with his way of life and practical activities. Until this relationship is understood it may not be possible to appreciate how influential such beliefs are in his conduct. His beliefs are moulded through his learning activities; through the acquisition of language, and socialisation. His membership of some social or professional group presupposes his acceptance of the prevailing world outlook of that group and its associated assumptions and beliefs, and exclusion of alternative ways of looking at the world. His system of beliefs stands for his "practical philosophy" which helps him take his bearings in society. Unless he understands the way in which society appears and is changing; possesses a coherent system of values which would be knowingly applied to assess what is taking place in the social world; and forms and adopts a practical philosophy which would be adequate only if it was also a social and political philosophy (PLAMENATZ, 1967/1977 : p.25), he will not be able to find his way through modern life and develop his aspirations.

Commitment to some coherent and realistic system of beliefs does not mean that facts would be ignored. Even if values may not be logically derived from beliefs about self and social life, they do seem to be affected by changing beliefs towards the facts. The influence of social and political theories upon the formation of belief systems increases with the recognition that thoughtful, planned action might successfully modify the social and physical environment in ways that approach certain cherished ideals. It is through social and political thought that the set of self-consistent principles constituting belief systems as practical philosophies would be related to planned action that is legitimated by government, and suggest kinds of action to be taken to implement those principles and the structure that such action should have.

Belief systems as practical philosophies guiding thought and action may not be acceptable to all individuals and may vary widely: ethical, political, cultural rules, norms, and principles may not be shared by all. But together with the diversity of beliefs and the tolerance to such diversity which springs from a pluralist democracy, there is also a certain community of interests and principles among the individual members of a society. These could be identified and put forward, though not taken for granted uncritically, in order to serve as guides for action aimed at realising those principles and values. Viewing an individual's system of beliefs or world outlook as a product of his society -- its language, institutions, values, conventions -- is an attempt to reconcile the perspective of the existential reality of the social individual and the social structural aspects of his consciousness.

An approach which limits emphasis to only structural characteristics of social life -- for instance, one that stresses only systemic features of urban social/spatial organisation -- might be evaluated as anti-humanistic for neglecting the existential reality and dignity of the individual social agent (CAWS, 1968/1970: pp.197-214), and hence its conception of knowledge may be assessed as inadequate on epistemological and conceptual grounds. In contrast, a perspective which focuses on systematic investigation of the constitution of knowledge in the individual consciousness tends to overlook the structural features that may be identified in social life. The attempt to establish logical connections between those perspectives and particular political, social, and ethical viewpoints has resulted in claims to the effect that, say, structural approaches to the study of social phenomena -- e.g. systems approaches -- are inherently conservative in political orientation for they take for granted the "status quo" of the political administrative, economic, etc. structures (such criticisms usually originate in the camp of "conflict theorists").

Moreover, humanistic perspectives -- for instance, phenomenological approaches -- by seeking to understand an individual actor's conduct in terms of its meaning for the actor as well as in terms of his motives for acting the way he did in the context of the world of his experience (his social position, his view of the world), may be said to be politically liberal, pluralist, or even radical. However, such connections may not be claimed to be logically necessary, and the research results from such approaches are not necessarily value-laden in this sense. This is not to deny that these perspectives tend to be more compatible with certain kinds of political arrangements

and may be employed politically. It is possible that both perspectives would result in accurate, objective analyses of social life (though the notion of objectivity may be differently conceived in each of these). Their contribution to knowledge of the world of man and society would be valid when assessed by the standards, rules, and procedures that are accepted within each perspective and its corresponding view of the world.

Feyerabend's view of science as a "comprehensive ideology", and his belief that there are ideological ingredients in any comprehensive theory or paradigm which makes "the choice between theories which are empirically disconnected .... a matter of taste" (FEYERABEND, 1970[a]: p.228), indicates the need to always examine potential connections between theory and politics. In the context of these arguments, it could be maintained that a technological view of policy making and planning of societal arrangements which would presuppose objective, true knowledge used instrumentally to rationalise human affairs might be viewed with suspicion by Feyerabend, or by Kuhn for that matter. The technological/instrumental relation between knowledge and action may thus be associated, admittedly indirectly, with a view of science as provider of objective, value-free knowledge of the world.

A technological view of planning would involve the creation of a body of empirically testable knowledge of the workings of the city in terms of the manifold interrelations obtaining within urban settlements and those that exist between cities and their larger environment. Such knowledge would derive from descriptions and explanations of urban phenomena and the regularities that are

discovered to hold in social/spatial organisation. It goes without saying that such knowledge would have to be obtained scientifically, viz. by applying "the methods and procedures of the scientists" (meaning "natural scientists"). For only scientific investigations are said to enable acquisition of objective knowledge of the ways in which phenomena and properties of systems are related regularly.(18)

Positivist accounts of science take it as totally independent of social experiences and cultural influences, and as constituting all knowledge. Although science is in fact a human activity, it is seen as unrelated to social life processes and the practical interests of individuals. Theory and practice are thus seen as wholly distinct, as are substantive and procedural aspects of planning based on the technological model of positivist science. In this view, social and spatial change in the city cannot be effectively controlled and directed other than by means of intelligently applied measures whose conception and design must be founded on such objective knowledge of urban social life and environment. This presupposes looking at "things as they are" in the city: from a viewpoint which is free from personal prejudices and biases, free from interpretation in terms of one's own needs, values, world view, free from cultural or social norms, and especially free from the influences of politics, power relations, and conflicts among individuals and between socialgroups.

Thus neutrality towards the social world enables its study "as it is" and not "as it could be" or "ought to be". The latter pertain to the realm of social action or"practice"and are to be strictly separated from scientific knowledge proper. The relationship between a neutral and objective scientific approach and the practical application of scientific knowledge to the task of selecting a morally

"right" course of action must depend on the view taken of the connection between facts and values. Such a scientific approach would ideally eschew disagreements on empirical questions that may be expressed in terms of personal values, or become influential due to the position held by some interlocutor in the power hierarchy, or appear persuasive because of the rhetorical ability of those who advance them. The absurdity of this requirement imposed on the urban planner is such that no further arguments would be needed in order to dismiss it. However, the technological paradigm of planning is so deeply entrenched in contemporary planning theory -- though not so widely practised; would not this be significant? -- that certain logical arguments will be invoked (later in this thesis) to criticise it and reject it at least in its strong version.

C H A P T E R F I V E

Perspectives of humanistic social thought: is a purely humanistic planning possible?

In reply to the Emperor's inquiry
"Among the hills what have you?"

"Among the hills what have I?"
On the ridges there are many white clouds,
But these are only for my own enjoyment,
They cannot be caught and sent on to your Majesty.

T'AO HUNG-CHING (452-536 A.D.)

C H A P T E R F I V E

Perspectives of humanistic social thought : is a purely humanistic planning possible?

1. Theories, research methods, and language in which they are couched.
2. Social studies influenced by linguistic philosophy.
3. Phenomenological approaches in social studies.
4. The hermeneutic tradition in social enquiry.
5. Aspects of Critical Theory : Integrating considerations of language, phenomenological intuition, and hermeneutic "verstehen" with structural aspects of social life; what would a "Critical Theory of Planning" be like?
6. Summary and Conclusions : Implications for theory and practice.
7. Epilogue to humanism and introduction to the perspective of science.

Footnotes to Chapters four and five.

1. Theories, research methods, and language in which they are couched.

There is further strong opposition to the claim of theory-neutrality of methods of scientific inquiry. It is argued that methods of analysis employed by some discipline are themselves part of the subject matter of that discipline : that it is, in fact, inappropriate to draw any strong distinction between substantive theory and procedural method. That the subject matter of a discipline should determine its methods of study is argued in (HUSSERL, 1965 : p.102) : "The true method follows the nature of things to be investigated and not our prejudices and preconceptions". The rationale of methods of inquiry is derived from the nature of the phenomena being studied (NORTHROP, 1947 : p.247) : "A subject becomes scientific not by beginning with facts, with hypotheses, or with some pet theory brought in 'a priori', but by beginning with the peculiar character of its particular problems ".

This suggests that it might be wrong to try and articulate a set of norms or rules of scientific practice which are sufficiently abstract and general so as to be independent of the subject matter of any particular discipline. Further, it could be misleading to claim that if the scientist adheres to such and such norms and principles he meets the necessary and sufficient conditions for scientificity of methods (EMMET and MACINTYRE, 1970 : p.xi) : "Rules which constitute necessary conditions for this, certainly ; but there are always in each specific well-developed science methods, procedures, and concepts the justification for the use of which is only to be found in the prior decisions of that science. The very subject matter appropriate to a given science comes to be identifiable only via the theories of that science".

Notwithstanding the preceding views, the separation of theory from methods of research seems to be still accepted in contemporary science--though strongly disputed in the social sciences. It may be argued that this dichotomy has been based on the distinction between the "context of discovery" (development and formulation of hypotheses) and the "context of justification" (testing the validity of the hypotheses) that has been made with regard to the process of scientific inquiry (or "scientific method", as is usually called in the framework of the methodological debate).(19) In the social sciences this distinction is epitomised in, say, (MERTON, 1957 : pp.86-87) : "At the outset we should distinguish clearly between sociological theory .... and methodology... Sociologists, in company with all others who essay scientific work, must be methodologically

wise; they must be aware of the design of investigation, the nature of inference, the requirement of a theoretic system. But such knowledge does not contain or imply the particular content of sociological theory. There is, in short, a clear and decisive difference between knowing how to test a battery of hypotheses and knowing the theory from which to derive hypotheses to be tested". Although Merton favours the relation of theory and research methods (and vice versa) he does so strictly in the context of justification. In contrast, Blumer recognises that "methodology embraces the entire scientific quest and not merely some selected positions or aspects of that quest" (BLUMER, 1970 : p.21). Methods of inquiry must be evaluated "in terms of their significance or implications for the nature of the world to which they are applied" (ibid., p.24).

The claimed interdependence of theory and methods of research is nowhere more strongly pronounced than in the writings of phenomenologically oriented social scientists (especially sociologists),[20] and in that context it is taken to be a basic premise of phenomenological sociology. On this view, methodology is treated as "the processes by which a sociologist generates an abstract view of a situation" and, consequently, it encompasses "all the processes by which a theory is constructed" (PHILLIPSON, 1972 : p.79). It is argued that "methodological decisions always have their theoretical and substantive counterparts" (CICOUREL, 1964 : p.1) since the "methods themselves contain implicit theories and assumptions about the phenomena being studied which should be problematic for the observer and not taken for granted by him" (PHILLIPSON, 1972 :p.96). The adoption of certain methods of inquiry tends to influence the kinds of subject matter that is chosen for study, since a position

is assumed as to the nature of the reality to be studied ; the ways of studying it; and the nature of explanations advanced to account for the phenomena of interest (ibid. : p.86).

Such arguments appear to leave little doubt about the close interrelations between theory and method, and to render a theory-neutral method a rather elusive concept. Further, it may be said that both theories and methods of inquiry are developed and applied within a universe with certain assumed characteristics : a way of looking at the world, or "Weltanschauung", is implicitly reflected also in the language (the terminology) in which theories and methods are couched (NATANSON, 1963 : p.14) and consequently, theoretical presuppositions of method cannot be viewed apart from the language employed in theorising and research : "linguistic structure and use affects the way people interpret and describe the world" (CICOUREL, 1964 : p.1).

The dual function of language as an instrument for reporting experience or as a technique of communication, as well as a way of defining experience for and directing the perception of its speakers is the central point of the "Sapir-Whorf hypothesis".(21) An implication of this hypothesis is that "science and scientific method as means of viewing and obtaining knowledge about the world around us provide those who accept its tenets with a grammar that is not merely a reproducing instrument for describing what the world is all about, but also shapes our ideas of what the world is like, often to the exclusion of other ways of looking at the world" (CICOUREL, 1964 : p.35). Consequently language, to the extent that it influences both theory and methods of inquiry, should not be treated as a mere resource but should be seen as a topic for investigation in its

own right.

A few very general remarks concerning the nature of the relationship between theory and method, on the one hand, and language, on the other hand, are in order at this stage. Interest in questions about language and linguistic phenomena has been growing considerably since the beginning of the twentieth century. Two distinct but related disciplines are dealing with such problems (COOPER, 1973 : pp.3-7) : (i) the philosophy of language sets out to investigate important general concepts of language, such as'meaning', 'truth', and 'facts' and does so within the framework of the philosophy of science (with special connections with logic, epistemology, metaphysics, and the philosophy of mind); (ii) linguistic philosophy is founded on the belief that philosophical problems in any field can only be solved, or even properly formulated, after due concern with aspects of language : either natural languages (e.g. French or English) or artificial languages. It differs from (i), above, in that it is an outlook rather than a subject (LACEY, 1976 : p.160).(22)

With reference to the problems of language in the context of the social sciences, recent development in social theorising (especially in the field of sociology), though showing great diversity, tend to indicate concern with questions of language and meaning in relation to interpretative understanding of human action. These developments seem to have been informed by at least three schools of thought, all more or less philosophical (REX, 1974 : pp.25-26), (GIDDENS, 1976 : Ch.1) : the analysis of ordinary language, phenomenology, and hermeneutics. The framework within which these outlooks have been developed and some of their main points are briefly discussed below.

The phenomenal growth of knowledge in one particular area, that of natural science,cannot be said to have been matched by similar successes in other fields, especially in the area of the sciences of man and society. The apparent instability which has succeeded the hitherto stable order of science - - an instability which is today reflected in the diversity of systems of beliefs,of scientific world outlooks, of theories of knowledge, etc. -- does not seem to have hindered its growth. Admittedly, natural scientific knowledge advances and is effective in its applications. However, its growth and achievements have resulted in increased specialisation of the cognitive apparatus employed therein, which tends to restrict its applicability to what may be seen as the less developed areas of the social sciences -- assuming, of course, that such applicability is, in principle, possible. In this sense, natural science as a body of knowledge and methods of inquiry does not seem able to sustain and promote social scientific knowledge despite the concerted efforts of social scientists. For it appears as an idiom which is irreconcilably different from that in which statements about human beings are couched. It thus tends to become unavailable as a premise for one's vision of one's social life. Science as an area in which a lot is known does not seem to be able to provide very good premises for deciding, for instance, the kind of social and political order or the kind of urban environment that ought to be aimed at.

The remarkable advances of natural scientific knowledge have stimulated increased emphasis placed on epistemological and methodological questions regarding the laying down of universal and inviolate criteria for assessing claims to knowledge, and the method whereby such knowledge is acquired. In relation to the latter kind

of question, it seems that the recognition of a state of instability in the scientists' and philosophers' beliefs and ways of looking at the world has been accompanied by parallel efforts to discover and standardise at least the way in which knowledge is obtained and legitimised through the method of science. One account of the way knowledge explains, which still commands the support of many, is that which takes scientific explanation to be the subsumption of events, phenomena, behaviour -- including human conduct -- under generalisations stated in some value-neutral scientific language. Now such an account of explanation of human behaviour may well be criticised as effecting the dehumanisation of the essentially human episodes of social life. For it may be contended that to view immensely variable human behaviour and attitudes as being explained in terms of the interplay of fixed entities, following the pattern of the natural sciences, results in destruction of human individuality and loss of irreducibly human qualities. Claims such as these appear to characterise many contemporary philosophical outlooks which may be referred to as humanistic. They tend to stress the need to preserve fundamentally human qualities in the study of social phenomena, and to retain a human image of man as against one which is explained by natural science ; in short, they advocate the creation of a human-centred science of society.

One might refer to the analysis of ordinary language (linguistic philosophy), phenomenological philosophy, and hermeneutic philosophy as providing the foundations for the latest human-centred approaches to the study of social life. The possible addition of pragmatism may be justified for it is a related philosophy of knowledge and action which chronologically precedes contemporary versions of

the former outlooks focusing on the world of man and society. To call these outlooks "humanistic" may be objectionable to some since the term has in the past been associated with a variety of doctrines and approaches and is thus not unambiguous. Moreover, the outlooks themselves do not express exactly the same ideas. However, it may be said that their similarities are more important than their differences, at least for the purposes of this discussion. The common core of such humanistic outlooks -- if the term "humanistic" is accepted as their designation -- is the emphasis they place upon the individual human being as a person, viz. as a potentially conscious and intentional actor who is able to choose how he acts and accept responsibility for the consequences of his actions.

In this sense, human beings are conceived as distinctively "free subjects", as the agents of "meaningful" acts, and as the "creators" of their social world which is not "out there" with its attributes and appearing independently of individuals who experience it and theorise about it, but is continuously produced and reproduced by human individuals in their interaction. Combined with this emphasis is an increasing scepticism regarding the generally accepted belief that human progress and improvement of conditions of life is to be effected by means of positive science ; an acceptance of the relativity of perspectives concerning ways of looking at the social world -- a view which commands substantial support in the philosophy of the natural sciences; an awareness that it is possible for each individual being to formulate his own view of the world in which he lives and to conduct himself in accordance with it.

2. Social studies influenced by linguistic philosophy.

The movements in the social sciences which originated from the work of the later Wittgenstein (WITTGENSTEIN, 1953/1968) and the Oxford ordinary language philosophers[23] have tended to place credibility to commonsense notions and beliefs about the world, and to relate language usage and meaning to some particular social context and culture with its own rules for intentional human action.
Such directions are exemplified in, say, Wittgenstein's notion of language as a "form of life" and his reference to "language games" featuring their own rules. The commonsense understanding of everyday life experience is seen as the framework within which all inquiry must begin and to which it must return. Social action is viewed as human activity which takes place within a social context; and is regarded as human action since it involves conceptual thinking and thus language which is a social product. The various social studies that have been informed by linguistic philosophy appear to stress the human agents' own definition of the situation in which they act, their power to exercise choice (rational or otherwise), and their ability to negotiate interaction or to manipulate expected role performances.

Social relations are thought of as expressions of ideas about reality, and hence the sociological understanding of social relations must be couched in terms of notions that are available to the social agents involved in such relations; methods of inquiry are thus interdependent

with substantive content. This is a direct derivation from the Wittgensteinian conception of language as a "form of life" which suggests that the meaning of a concept or a belief is to be found in its use in a particular context which is culture-bound; and this is all that is required for its justification. It is not possible to assess its validity by employing criteria of truth and rationality and methodological rules and procedures which transcend cultural and social contexts. The social and cultural world is said to be understandable only through some technique of "getting inside" the meaning systems of everyday life and language. In this sense, a conflict is claimed to exist between the scientific conception or image of individual human beings and their image as it is manifested in everyday life. The latter is said to be most directly expressed in accounts of human action stated in ordinary language where it appears as the image of a feeling, conscious, intentional agent.

However, accounts of human behaviour couched in ordinary language are not granted the status of knowledge by those who advocate a science of society modelled on some view of the natural sciences (usually on a logical empiricist account of science). Such ordinary language accounts refer to notions such as "wanting", "trying", etc., which are taken to be mentalistic, i.e. to pertain to the private realm of feelings, and hence to be impossible to express in empirically grounded and intersubjectively verifiable scientific propositions. By reducing mind to body (on some version of physicalism), or asserting that both mind and body can be viewed in terms of the same underlying reality or "neutral stuff" (as in neutral monism),[24] a confusion is claimed to result between bodily

movement and intentional action, between reflex and conduct (URMSON, 1956) in the study of social action; and there seems to be no way to distinguish these essentially different concepts.

The tradition of social studies which are influenced by ordinary language philosophy rejects causal analyses as inadequate in themselves in affording full understanding of human conduct. Moreover, behaviourist approaches to studying social phenomena are severely criticised for their endeavour to base social theories on a bedrock of neutral, theory- and value-free empirical data which are publicly accessible and amenable to unambiguous measurement. Such studies take intentional human action to be distinct from motion and impossible to explain in terms of causes. They tend to approach the study of human behaviour outside the scientific world view of cause and effect and maintain that such an outlook cannot provide knowledge of the meaning of human actions seen properly in its social context. The vocabulary of physical science is claimed to be inadequate in accounting for human conduct which is essentially normative, bounded by rules whose validity holds only in specific social contexts.

For instance, by restricting inquiry into human action to mere physiology it would be possible to deduce that an extended open palm facing some observer means "five" in some places but is understood as a "swear" expression in Greece. Hence the need to understand the language in which various social phenomena are discussed is only one of the requirements for attaining an understanding of those phenomena. In addition to that, familiarity with the phenomena that are being inquired into is

necessary, in the sense of understanding what can be taken as a social phenomenon. For if an observer is not familiar with, say, the Greek culture then he is likely to view the "extended palm" sign not as a social phenomenon indicating anger or disgust of an actor, but rather as a physical movement or even something else. The point is made that (WINCH, 1958/1963: pp.134-135): "Whereas in natural science it is your theoretical knowledge which enables you to explain occurrences you have not previously met, a knowledge of logical theory on the other hand will not enable you to understand a piece of reasoning in an unknown language; you will have to learn that language, and that in itself may suffice to enable you to grasp the connections between the various parts of arguments in that language".

By arguing that human and social action must be understood in terms of reasons, rules, personal projects, and socio-cultural context the very possibility of a science of man and society modelled on the natural sciences comes to be disputed on grounds of fundamental differences in the objects of study of the natural sciences and social studies. The distinctive characteristics that are attributed to human beings and their social relationships, viz. that they are free subjects, the agents of meaningful acts, and the creators of their social world, are said to necessitate a totally different approach to investigating such aspects of human and social behaviour to what is seen as the scientific method of the natural sciences. The attempt to develop formalised "scientific" languages to describe and explain social phenomena is abandoned in favour of an in depth investigation and analysis of the structure and presuppositions of "ordinary language". Human action is explained in "everyday"

terms of intentions, purposes, motives, etc., i.e. in teleological terms, rather than by means of explanations that are cast purely in terms of efficient causes. The works of the so-called "new-teleologists" -- e.g. (TAYLOR, 1964); (LOUCH, 1966); (PETERS, 1960) -- share in the tradition of modern analytic philosophy by criticising Logical Positivism and the doctrine of the "unity of method" in natural and social sciences.

3. Phenomenological approaches in social studies.

Phenomenological philosophy (or method) [25] has informed many studies of social life, both in its Continental tradition and in its American version as applied to analyses of everyday social activities -- the latter being commonly referred to as ethnomethodology.[26] Phenomenological approaches to social science stress the distinction between society and nature, between the socio-cultural and physical worlds: the latter is not man-made, produced by man (although human beings do interact with and change it), while society is the outcome of the consciously applied skills of human subjects. This is not a world which exists "out there" possessing attributes and appearing independently of the individuals who experience it, but is constituted through intersubjective communication and action. It is produced by the skilled performance of human beings as participant in every social encounter.

This crucial difference is said to entail a different methodological approach to the study of society and the rejection of "conventional" approaches which adopt the paradigm of the natural sciences in their search for order and scientifically testable theories in the socio-cultural world. Phenomenological sociology[27] is advanced as an alternative position to existing approaches which have been developed within an empiricist, so-called neo-positivist, epistemological and philosophical outlook. The phenomenological critique of the methods[28] and their associated presuppositons employed by these latter "conventional" approaches appears to be rather well-aimed, especially to the extent that it points out certain difficulties involved in a physicalist or behaviourist account of social life, which tends to minimise the alleged differences between the physical and socio-cultural worlds. However, acceptance of the existence of such differences need not entail either adoption of phenomenological sociology as the "correct" alternative to empiricist or scientific sociology or of its account of the process whereby "social reality" is constructed as the best account available.

A phenomenological approach to social science would claim that (NATANSON, 1963[a]: p.273): "what is needed above all is a way of looking at social phenomena which takes into primary account the intentional structure of human consciousness[29] and which accordingly places major emphasis on the meaning social acts have for the actors who perform them and who live in a reality built out of their subjective interpretation". The contribution of Alfred Schutz towards the phenomenological reformulation of scientific method and the "humanisation" of the social sciences has been highly influential in recent attempts to develop a phenomenology

of the social world. His writings on methodological issues in social studies are particularly interesting. Schutz argues that both the objectivist/naturalist and subjectivist/intuitionist schools of thought in social theorising are inadequate in the approaches that they adopt in inquiries concerning human conduct. He views the former school as being founded on the presupposition that by accepting and systematically applying the methods and procedures of natural science it is possible to obtain reliable knowledge of the social world. However, stressing publicly accessible observational data as the rock bottom foundations of social theories leads one to neglect understanding of human individuals in their everyday life activities, and the empirically unobservable thoughts, feelings, reasons, motives that may initiate their overt behaviour.

Regarding the latter school, he claims that it emphasises the existence of pervasive differences in the constitution of the world of nature, on the one side, and the world of man and society, on the other side. Writers belonging to the subjectivist/intuitionist tradition maintain that such differences in the nature of the subject matter of the natural and the social sciences essentially affect the kinds of methods of inquiry that may be intelligibly applied to obtain knowledge in either realm. Thus the study of social life necessitates methods that are peculiar to it. However, through its wholesale rejection of naturalist methods and procedures this school seems to overlook the possibility that certain procedural rules and methodological conventions applied in acquiring knowledge may be common to all fields of empirical inquiry (SMART, 1976: pp. 99-100). Schutz's methodological contributions are aimed at preserving the integrity of unique human individuals but not

at the cost of sacrificing the exactness, clarity, and systematic procedures of empirical science.

His goal is to achieve the fusion of objectivist and subjectivist approaches into an integrated methodological framework. He rejects the implications of a subjectivist epistemology and subscribes to Max Weber's requirements that social scientific knowledge be empirically validated prior to its acceptance, and that it must attempt to interpretatively understand the subjective attitudes of social agents. Schutz's phenomenological approach encompasses much of the theoretical basis of Weberian social science and introduces into it a number of concepts from the phenomenological philosophy of Edmund Husserl. He accepts, in a broad sense, the three key elements of Weber's methodological approach, viz. the notions of "value-relevance", "verstehen", and "ideal type".(30) However, he argues that Weber fails to provide an explicit theory of subjectivity which would enable unambiguous understanding of the meanings of his three principal methodological concepts as well as establish the connotation of notions such as "meaning" and "action" in a social context. In his attempt to formulate such a theory of subjectivity Schultz draws on Husserlian phenomenology. He elaborates a scientific method which takes into account the peculiar characteristics of the world of social life and culture -- so-called "life-world" or "Lebenswelt",

He stipulates that to develop descriptions of human conduct social scientists must depend upon the typifications(31) employed by members of society themselves in describing or accounting for their actions. Reflexivity or self-awareness in human conduct

is an important aspect of such members' accounts. Self-understanding is connected integrally to the understanding of others. Understanding one's actions is only made possible by understanding, in the sense of being able to describe, what others do, and vice versa. It is a matter of semantics and essentially depends upon the social character of language as a medium of practical social activity. It is a question of being informed by the communicative categories of language, which in turn presuppose definite "forms of life". Thus, the multifold character of language, in which such members' accounts are couched, is recognised : the way language is embedded in social practice constitutes a subject for investigation and is not taken for granted.

In his critique of phenomenological sociology Smart argues that (SMART, 1976: p.75) : "Perception of externalisation and objectification as taking place primarily through language has produced a preoccupation in phenomenological sociology and ethnomethodology with accounts, descriptions, conversations and talk. The social world is treated as a linguistic and cognitive world and the task of sociology becomes one of describing the processes by which the social world is constructed through accounts, readings, understandings and interpretative procedures". When it is put forward as a theory of society, a pure phenomenology of the social world is said to neglect several important elements of social life. By starting from the individual actor it fails to provide a way of grasping the supra-individual <u>whole</u> of a societal outlook or a cultural system (WOLFF, 1975: p.64). Moreover, it seems to ignore the <u>historical perspective</u> of social action -- dialectical or otherwise depending on the cognitive tradition from which

the criticisms originate -- which necessitates a diachronic model.

In addition, it is argued that a phenomenological framework fails to accommodate the structural context of meaningful action in the sense that it inherently excludes the practical involvements of human life in material activity requiring work (system of production) and affected by relations of power and domination. To adequately account for such a structural context of meaningful action requires a structural model. But structural approaches by themselves, i.e. without being supplemented by considerations at the level of meaning which is occupied by phenomennology, afford no way of identifying either the pertinent social groups to which some ideology or world view may be attributed, or the nature of the content of such world views. Rather, these groups are identified either by prior commitment or through arbitrary decision (WOLFF, 1975:pp. 130-131). These shortcomings are said to be remedied by hermeneutic approaches to the study of social life, which: (i) appear capable of retaining the phenomenological intuition while (ii) seeking to comprehend the wider perspectives of society and history (ibid.: p.103). Phenomenologically oriented social studies could make important contributions in cases where it is pertinent to reveal the underlying presuppositions of concepts employed to define some situation, that is, when such concepts are not neutral between the participating actors but rather serve the interests of one side. Studies in the so-called "sociology of deviance" have developed phenomenological approaches in providing alternative definitions of the situation, viz. from the viewpoint of the deviant, the offender, the delinquent, etc.,

who are faced by the implicit ideologies and view of order of complex and integrated legal and medical systems (MATZA, 1969).

4. Social studies influenced by the hermeneutic tradition.

Hermeneutic philosophy is a long-established philosophical tradition.[32] It incorporates diverse views which are characterised by the emphasis they place on the concept of "verstehen" (or interpretative understanding) in studying social life and the products of human culture and thought (such as works of art, literary texts, etc.). The notion of "verstehen" may be said to originate in theological hermeneutics -- i.e. the art of interpretation attempting to disclose an understanding, coherence or sense in biblical, historical, or other esoteric texts -- and in problems of understanding alien cultures in the context of historical or anthropological studies. This concept is applied to interpretations of contemporary society and culture on the assumption that there is an analogy between the context of interpreting and clarifying the meaning of texts and alien cultures and the context of human conduct and social intercourse (the object of interpretation being taken as a text-analogue) (TAYLOR, 1971: p.1).

Writers adhering to this philosophical tradition contend that "the empiricist account of science as objective, cumulative,

success-oriented, and value-free, is no longer adequate either as an ideal or as a methodological model for the social sciences" (HESSE, 1976: p.3).(33) It is claimed that any attempt at understanding which involves other understanding beings, persons, and therefore self-understanding must face problems of "verstehen" (PELZ, 1974: p.2). On one of the earlier views of hermeneutics, associated with the philosopher Wilhelm Dilthey (1833-1911),(34) the task of "verstehen" would inevitably involve elements of sympathy, empathy,(35) the attempt to re-experience, re-live, and reconstitute the social life that is being investigated. This view presupposes methodological dualism: the methods that are appropriate to the study of the natural sciences do not coincide with the (interpretative) methods to be employed in the study of the world of man and culture. Later versions of the concept of "verstehen", especially Max Weber's application of it as a main component of his "scientific method" of studying the social world,(36) have tended to move away from Dilthey's view.

The writings of Hans-Georg Gadamer, especially (GADAMER, 1965/1975), and of Martin Heidegger, in particular his (HEIDEGGER, 1962), might be said to state the case of modern hermeneutics (WOLFF, 1975: Ch.7). The Dilthean presupposition that hermeneutics be understood as one kind of "epistemology" and that the "methodological debate" in its Neo-Kantian form may continue to provide the context for discussing scientific explanation as against interpretative understanding of social phenomena is seriously questioned by both Heidegger and subsequently Gadamer (RICOEUR, 1978: p.150-151): "Their contributions cannot therefore be taken as the simple prolongation of Dilthey's enterprise. Rather they must be seen

as an attempt to dig beneath the epistemological enterprise in order to disclose its ontological conditions ... There is a new question. Instead of asking, 'How do we know?', the question will be, 'What is the mode of being of that being who only exists through understanding?' ". Moving towards the direction of ontology these writers elaborate the notion of "hermeneutic verstehen" which differs from the Dilthean concept of understanding.(37) For Gadamer, hermeneutics is the point where three streams of thought in the cultural sciences (or "Geisteswissenschaften") tend to merge; these being Husserlian phenomenology, Dilthey's historicism, and Heidegger's hermeneutic-existential philosophy (GADAMER, 1965/1975: p.xxix). Thus "hermeneutics consists ... in the individual, socially-situated, sociologist or historian understanding the existential meanings, symbols, expressions and values of another culture and its inhabitants, and (being) simultaneously aware of his own historical consciousness and its role in this process" (WOLFF, 1975: p.132).

As Ricoeur puts it, "it is the function of hermeneutics to make the comprehension of the other -- and of his signs in multiple cultures -- coincide with the comprehension of oneself and of being" (RICOEUR, 1963: p.617). Gadamer extends the "hermeneutic method" to all the "cultural sciences", although he stresses that hermeneutics is not so much a <u>method</u> as "a discipline which guarantees truth" (GADAMER, 1965/1975: p.465). However, he claims that in hermeneutic theory subject-matter and method are <u>intrinsically connected</u>. The object of study does suggest a <u>method</u> of approach in the hermeneutic tradition: " ... the problem of method is completely determined by its object" (ibid.: p.297). But hermeneutics as

a discipline is not only taken by Gadamer to imply a method of approach to the study of sociology and the humanities but also to lead beyond method into its own ontology (theory of existence) and a corresponding epistemology (theory of knowledge).(38)

Because the hermeneutic process (or process of interpretative understanding) moves in a circular manner, it has come to be known as the "hermeneutic circle". The object of the hermeneutic process has to meet certain conditions (TAYLOR, 1976: pp.153-155). It must be possible: (i) to make sense of (interpret) the object in terms of coherence (or its absence); (ii) to distinguish the meaning of this object (its coherence) from the expression of the object, that is, its embodiment in some text or text-analogue (its social context); (iii) to take the meaning of this object as being expressed for or by a subject (or subjects). T he interpretation of the meaning of situations, actions, etc. moves in a hermeneutic circle. The subject matter of the hermeneutic act is approached by its interpreter with certain prejudices or anticipations originating in the researcher's own historicity but also with an "openness" towards its meaning (or "the facts").

The balance or dialectic between prejudices and "openness" enables the interpreter to discover and revise distorting prejudices as he increasingly penetrates into the meaning of the subject matter he is attempting to comprehend (GADAMER, 1960/1965: pp.250 ff). There are two aspects of the "hermeneutic circle" which may be said to determine its circular nature. On the one side, there is a controlled oscillation between present and past horizons in terms of the movement from one horizon to the other and back again to

the starting point. On the other side, there is a simultaneous movement between specific part and anticipated whole, between a situation whose meaning it is attempted to grasp and its social/cultural context; and this is a process of a conversational nature (ibid.: pp.275; 349). To understand particular aspects of a society the interpreter/social scientist must have prior knowledge of the total, socio-cultural context of that society, which in turn can only be grasped through the particular manifestations of that totality in specific social acts.

The claim that an interpretative account of some subject matter makes sense is founded on the interpreter's reading of it which cannot be justified other than by reference to other such readings and their relation to the whole. The activity of interpretative understanding is not aimed at establishing the correct reading of some social action framework. Different interpretations may be plausible and there is no process of verification, analogous to that employed in the physical sciences, with which to assess the validity of alternative interpretations. Rather, hermeneutic understanding involves a creative process of interpretation through which the investigator offers his account, in the present time-horizon, of historical or alien, hitherto obscured aspects of society and culture (OUTHWAITE, 1975: p.103). In case a discussant misunderstands, rejects, or does not grasp that reading there is no way of persuading him other than by appeal to other readings, and this presupposes that he must follow these latter; if not, the hermeneutic process continues, it seems, for ever. The ultimate appeal to common understanding of the language involved seems to be inescapable. In this sense, the inherent uncertainty in meaning

in "hermeneutic knowledge" is taken to be a characteristic of the knowledge of the sciences of man and society. There is no "objective" knowledge to be derived from the hermeneutic process, which is comparable in objectivity to scientific knowledge in the natural sciences. The "truth" of the subject matter of hermeneutics is claimed to be historical, relative, and socially determined. The best the social scientist can do in his attempt to interpretatively understand social acts is, it seems, to work with full consciousness of his own historicity and relativity and its implications for the "true" meanings of social acts: each age will comprehend in a different way a past age.

Hermeneutic theory is said to be able to remedy the inadequacy of phenomenological social studies in grasping the historical perspective of social action while retaining the valid elements of phenomenological intuition. Stressing the "essentially historical character of being" (BARRETT and AIKEN, 1962: p.287) Heidegger qua historicist argues that the past must be grasped in its historical context which includes the contemporary interpreter: there is a need to pass from simple psychological understanding to historical understanding (RICOEUR, 1978: p.150). Thus, "verstehen" must seek to comprehend the totality of world-experience: understanding is also self-understanding. By definition the past may only be interpreted from some present point of view. Dilthey takes the central task of hermeneutics to be understanding some action context under the law of understanding another person who expresses himself in that action context. This enterprise remains psychological for it focuses on the individual agent who expresses himself in some action frame, rather than on the nature of that frame (ibid.: p.149).

Dilthey's subjectivist theory of empathetic transposition of the interpreter into the past is not condoned by Gadamer or Heidegger.

They contend that a hermeneutic approach to social life does not require a mysterious communion of souls à la Dilthey, but rather involves participating in a common meaning (GADAMER, 1965/1975: pp.274-276). There follows that what may be referred to as the "truth" about the past is dependent upon and relative to every "present". Taking all knowledge of social life to depend on social and historical position, this view is said to lead to epistemological relativism. The difficulties facing relativist views of knowledge, the most serious and unanswerable of which seems to be the self-negating character of such views, are not regarded as problematic by Gadamer. Seeing relativity as an advantageous feature of cultural studies, he argues that historicity guarantees the "truth" of an interpretation. Presumably his notion of "truth" is far removed from empiricist accounts of "truth as correspondence" with facts, that are prevalent in natural science. The "truth" discovered by hermeneutic methods is, therefore, not attainable by science. Gadamer opposes the empiricist account of objective, value-free observation and inquiry which is unaffected by personal prejudices, presuppositions, or preferences. He takes this methodological ideal of natural science to be unattainable in the social and cultural studies. He argues instead that preferences and prejudices are necessary conditions for understanding. The historical consciousness, seeing its own present, brings prejudices into play in interpretative understanding which thus becomes a fusion of horizons of past and present (WOLFF, 1975: pp.104-105).

The appropriateness of hermeneutic approaches in the study of social life is said to be decided by the requirements of understanding the "meaning" aspects of human conduct. The notion of "meaning" is taken to be central in the study and characterisation of social action (TAYLOR, 1976: pp.161-163). A situation, action, episode; a prospect, a plan has a certain meaning for an individual, different from linguistic meaning: (i) it is the meaning for an individual; (ii) it is the meaning of something (an action, a plan); and the description of that action, project, plan, etc., is to be differentiated from its description in terms of its meaning for a human agent; (iii) situations, actions, plans, etc., have meaning in some field, viz. in relation to the meanings of other things; and changes in the meanings of the latter may have implications for the meaning of the former. Thus, the meaning which it is sought to grasp through hermeneutics, so-called "experiential meaning" (ibid.: p.162), is to be distinguished from linguistic meaning and refers to the meaning of a situation, action, plan, etc., for a human agent. It is integral to his consciousness and his language employed to account for his actions.

Human action may be characterised by the purpose of the actor and accounted for by reference to his desires, feelings, emotions. The actor employs language to provide accounts of these latter, which is also a redefinition of the meaning things have for him. The understanding of, say, emotional concepts can only be realised by relating them to certain kinds of situations in which they are generated and to certain kinds of response these situations evoke. Such concepts cannot be explained unless they are related to other concepts, but these latter cannot be understood unless they are

referred to the former. Thus, the grasping of such concepts moves in a "hermeneutic circle": it is essential to be in possession of a certain language both of words and mutual action and communication, of shared meanings. Cultures that are alien to an interpreter will therefore present problems of understanding which involve the grasping of the "way of life" of these cultures. Human conduct is seen as action performed in a context, and this reality must be characterised in terms of meaning.

Gadamer emphasises the centrality of language in any endeavour to understand the totality of a culture or society as well as the context of meaning of its particular aspects, social situations, episodes, etc. He views language-in-use, rather than its abstract grammar and vocabulary, as basic to and determining the world view or fundamental ideology of a culture. But language is seen as one significant form among other forms of life: its role is crucial in the creation of the world of meaning. In this way, Gadamer seems to avoid the rather extreme thesis advanced in (WINCH, 1958) deriving from an interpretation of Wittgenstein's view of language as a form of life, which reduces social science to linguistic analysis. However, Gadamer's hermeneutics as a method and a philosophical system for the social sciences has been criticised on methodological, epistemological, and conceptual grounds.(39)

His views are, of course, expressed within an idealist philosophical tradition and when these are put forward as a theory of society, they are immediately subject to criticism by, at least, those who espouse a materialist ontology. Thus, Gadamer's theses that :
(a) all perception is perspectival i.e. from some point of view;

(b) experience is inevitably determined historically and socially; and (c) language contributes in the creation of the world; are taken to entail neglect of the material foundations of existence and the social structures of production and work, and of power which underlie it. These criticisms are reflected in the work of the contemporary German social philosopher, Jurgen Habermas, who develops his ideas in the tradition of the Critical Theorists of the so-called Frankfurt School. Habermas attempts to bring together, in the unifying framework of a critical theory of society, the idealist insights of Gadamer's hermeneutics with aspects of the material world regarding the structuring systems of production (work) and authority (power).

5. Aspects of Critical Theory : Attempts at integrating considerations of language, phenomenological intuition, and hermeneutics with structural aspects of social life.

The programme of the group of German scholars and social thinkers who established the so-called Frankfurt School has come to be known as "Critical Theory" and exhibits strong connections with the hermeneutic tradition. Writers such as Horkheimer, Marcuse, Fromm, Adorno, Albert, Apel, and Habermas are said to belong to the common ideological and theoretical tradition of that School. Although their programme comprises several diverse theses, not always in agreement with one another, it does also have certain common

elements that are shared between the above scholars. Such common elements may be said to be their close Marxian affinities, but also their marked divergences from Marx's "Critique of Political Economy"; and the belief that aspects of social life cannot be understood independently of "the historical whole, of the social structure conceived as a global entity" (CONNERTON, 1976: p.12). The rediscovery, in the late 1960 s, of "Critical Theory" -- itself a creation of the early 1930 s -- may be attributed to the contemporary social philosopher Jurgen Habermas. The remainder of this note will therefore deal with the latter's principal theses.(40)

However, it is appropriate to explicate the notion of "critique" -- which is a key concept in "Critical Theory" -- prior to discussing Habermas' work. "Critical Theory" makes use of the concept of "critique" both in its traditional sense and also in two other senses (CONNERTON, 1976: pp.15-16). The traditional sense of "critique" was developed from an early usage as the art of informed judgment in connection with hermeneutics, viz. the study and interpretation of ancient texts. Having derived from that early usage, the contemporary notion of "critique" has come to be associated with the activity of rational thinking which subjects to judgment and interpretation all spheres of social life that are accessible to reason, taking these as "text-analogues" (TAYLOR, 1971). It is in this sense that "critique" is employed by the critical theorists of the Frankfurt School; that is, as "oppositional thinking", as an activity of revealing hitherto hidden meanings in aspects of social life. But critical theorists also use "critique" to denote two other meanings originating in the philosophical tradition of German Idealism.

One meaning derives from Kant's "Critique of Pure Reason" and may be taken to denote "the rational reconstruction of the conditions which make language, cognition, and action possible" (CONNERTON, 1976: p.18). In this sense, "critique" as "reconstruction" is concerned with the understanding of systems of rules adhered to by any competent subject. As an activity of reflecting on the conditions of possible knowledge, "reconstruction" makes use of objective information (in the form of actions, sentences, and other conscious human operations) in its endeavour to explicate rules that are implicitly followed by any human being (and not by some particular individual), and establish the sort of knowledge that is needed in order to competently apply such rules.(41) In this way, "critique" as "reconstruction" tends to expand theoretical knowledge without necessarily altering the practical conduct of individuals.

The other meaning ascribed to "critique" by critical theorists denotes "the analysis of constraints to which classes of individuals are subject" (CONNERTON, 1976: p.20). This meaning of "critique" as "criticism" seems to originate in Hegelian idealism (in Hegel's "Phenomenology of Mind"). It pertains to the activity of deliberating on a system of man-made constraints (or pressures) which impose restrictions upon human conduct and action (of individuals, groups, or whole societies). This view of "criticism" is founded on the assumption that objects of experience are subject to inbuilt distortions which pass as objective reality. This seems to justify attempts to identify and subsequently change or eliminate such distortions by way of critical reflection to arrive at a liberated consciousness. In this sense "criticism"

entails "emancipation" from constraints imposed on the individual by authority and power. Emancipation is attained by means of critical insight into the system of domination or power which reveals to consciousness hitherto covered restrictions. "Criticism", therefore, focuses into the forming of the identity of a particular subject (an individual or group thereof). It initiates a process of self-reflection which is aimed at illuminating hitherto obscured aspects of the subject's consciousness. This will ultimately bring about the subject's liberation from socially unnecessary constraints of his freedom and, consequently, will affect the practical aspects of the subject's conduct(practical referring to the realm of ethics or politics).

The meanings of "critique" referred to above, namely (i) "critique" as "reconstruction "reflecting on the conditions of knowledge of social life, and (ii) "critique" as "criticism" dealing with practical aspects of individual conduct, seem to be sufficiently different to merit distinction. However, such differentation is not always evident in the writings of the members of the Frankfurt School. In the context of a critical theory of society, the sense of "critique" as reflection on conditions of knowledge of the social world has important methodological implications for the whole field of the social sciences (in particular, sociology). Thus, it is argued by critical theorists that the methods of the sciences are, in principle, not applicable to the study of social life. There are, it is claimed, fundamental differences between the subject matter of sciences such as physics and astronomy which are concerned with inquiries into the movement of inanimate bodies and into observable events, and the subject matter of the social sciences which is societies and social life. Societies are seen as systems

of communicative action: as objects of possible knowledge they are constituted in a different way to that of physical reality. Such views are also informed by phenomenologically oriented approaches to the study of social life, in which the investigator of a social episode is himself taken to constitute part of the process of cognition as a social act (in opposition to the logical empiricist thesis that he be a neutral observer of social phenomena).(42) Further, concern with language as an aspect of communicative action establishes connections between critical theory and philosophical analyses of language.

Both Habermas and his contemporary, Apel (APEL, 1968), are influenced by the hermeneutic tradition although they have moved towards a different direction from that of Dilthey's "early hermeneutics". In this they have been informed by another more recent German social thinker, Gadamer, whose seminal work "Wahrheit und Methode" may be said to state the case of modern hermeneutics (GIDDENS, 1976: pp. 54-55).(43) Gadamer views language as central to the method of "verstehen"; the process of "verstehen" is linguistic since speech is the medium in which the understanding is accomplished. The dialogue between the interpreter and his subjects can only take place through language (GADAMER, 1960/1965: p.361). Habermas' work acknowledges its debt to Gadamer, but also diverges from the latter's thesis in important respects. Thus, Habermas agrees that the recent developments in linguistic philosophy (and in particular the work of the later Wittgenstein and its contribution to the study of social life attempted by Winch) and in the field of linguistics (marked by the work of Chomsky, for example) are very significant for the understanding of human conduct. In fact, he takes such developments

to show that the problems of language have replaced the traditional problems of consciousness in the process of understanding meaningful human action (HABERMAS, 1970).

He appreciates both the nature of language and its significance in social life, and also the importance of interpretation to all forms of inquiry. He concedes that understanding is attained through discourse: "verstehen" is related to language as the medium of intersubjectivity and as the concrete expression of "forms of life". However, in opposition to Gadamer (and to Winch, for that matter), both Habermas and Apel stress that the study of human activity cannot be purely hermeneutic (HABERMAS, 1970: p.289):(44) "A verstehende sociology which hypostatises language so as to make it the subject of the form of life and the tradition ties itself to the idealist premise that linguistically articulated consciousness determines the material meaning of life-activity. But the objective system of social action is not confined to the dimension of intersubjectively intended and symbolically transmitted meaning. The linguistic infrastructure of society is a moment of a system which, however they are mediated symbolically, is also constituted by the constraints of reality; the constraint of external nature which goes into the process of technical control and the constraint of inner nature reflected in the repressions of social power relations ... Sociology cannot allow itself to be reduced to being merely interpretative".

Habermas criticises the contemporary approaches to social inquiry (HABERMAS, 1970) which draw on linguistic analysis, philosophical idealism, and phenomenology (represented in the works of, say, Winch,

Schutz, Garfinkel, Cicourel, and others); as well as the "verstehen"-sociology of Max Weber. He claims that these approaches are inadequate for a proper sociological understanding of human conduct and social life, and that they have misconceived the unique structure of communication in ordinary language (WELLMER, 1971: pp.30 ff.).(45) He views the phenomenological penetration of the social actor's life-world (the "Lebenswelt") as wanting. The undefined empathic grasp of the actor's situation, with its meanings and significances for him, to be arrived at by generalisation based on the sociologist's experience is seen as unsatisfactory. Because phenomenology starts from the individual, it is criticised for failing to provide a way of grasping the supra-individual whole of a societal outlook or a cultural system. Hermeneutics claims to be able to remedy this inadequacy by: (i) retaining the phenomenological intuition through which it gains insight in the existential meanings of historical individuals, and (ii) grasping structural wholes, thus resolving the tension between structure and the existential individual(WOLFF, 1975: pp.130-131).

The rules of interpretation of social situations, actions, etc., as invariant essences of the social life-world cannot by themselves provide the requisite understanding of the phenomena. Habermas contends that such rules are themselves subject to the influence of other social processes: for example, power relations, class structures, socialisation processes, and material production (work). The "transcendental contemplation" in the study of social life (à la Husserl) can be no substitute for systematic participation (HABERMAS, 1970: p.215): "We only grasp the construction of individual life-worlds by way of socially accustomed communications;

but one learns their specified rules by systematic participation and not, as Schutz assumes, by phenomenological intuition, or as Cicourel and Garfinkel assume, by phenomenologically guided experiments".

Habermas attempts to draw together relevant insights from linguistic analysis, the phenomenological intuition of social life, and hermeneutics and combine these with analyses of the structural elements of societies reflected in relations of power, authority, domination, and material production (work). His position on the "methodological debate" in the social sciences is developed in the Neo-Kantian spirit. The natural sciences have as their subject matter the inanimate world of objects and observable phenomena which are amenable to manipulation and control. Their interests focus on instrumental action. In contrast, the sciences of man and culture study speaking and acting subjects in societies which are thus differently constituted as objects of possible knowledge.
The network of intentional actions formed by a society cannot be accounted for by statements that are reducible to observational reports, but involves the inquirer into an understanding of meanings in order to acquire his data. While the natural scientist/observer is asked to eliminate the strictly subjective elements in his controlled observation and in this way secure intersubjectivity and reproducibility of experimental data, in the social sciences there is a relation between inquirer and those that are being inquired into.

This relation involves both parties in communication and dialogue: dialectical relation replaces observation in social science.
This introduces the perspective of communicative action -- as opposed to the instrumental action of the natural sciences directed toward

domination of nature — which requires understanding of others' intentions, motives, feelings that lie behind their actions, but does not involve considerations of domination, but only enhanced communication. The practical implications of this differentiation between objectives, methods and procedures of inquiry in the natural and the social world are traced in an outline of a political theory. This stipulates that the contemporary scientific/technological establishment must be subject to the control of the public in order to be rational and not left to dominate upon the lives of individuals; their autonomy is to be safeguarded by instituting dialectical processes between men regarding the goals to be pursued in societal arrangements and public planning. By enhancing communication among them through public discussion and critique it would be possible to remove distortions in understanding and obstacles in communicating.

There are also certain theoretical implications of the natural/social divide in methods; these are formulated by Habermas into a "theory of communicative competence". This envisages the elimination of constraints on discourse imposed intentionally by communicating actors: not the kind of obscurities that enter accidentally but rather systematically distorted messages (much like those studied by Freudian psychoanalysis). The communication process is taken to be unconstrained when all participants have equal opportunities to participate in the dialogue. In this way, enhanced communication is associated with an ideal form of life, thus linking politics and communicative dialogue: viz. the practical and theoretical implications of the separation of instrumental and communicative action.

Habermas' views come into opposition with Popper's critical rationalism in epistemology and "piecemeal social engineering" and problem-oriented technological planning of societal affairs (practice) -- the latter often taken as one of the specific moral and political consequences of the former. Popper's falsificationism or critical testing is predicated on an "open society" which tolerates pluralism of views and criticism of accounts, solutions, policies put forward by others, leading if required to their modification or rejection and replacement by new ones. His quest for objective, ethically neutral scientific knowledge which is to be rationally and systematically applied to the solution of social problems -- with the ends already identified outwith the knowledge-procuring processes -- is countered by Habermas' claim that knowledge of both natural and social phenomena is interest-charged and not value-free as the objectivist ideal would have it. Scientific knowledge of nature is not the result of pure intellectual curiosity and disinterested contemplative activity but rather involves a variety of interests, and most importantly those of technical control and exploitation of the physical world and its natural resources.

However, there is a difference between the "interests" of the scientific community referred to by Habermas and the well-known interest of industry in the application of scientific knowledge to production processes -- the latter becoming manifest after the emergence of industry in its present form. Rather the interests of the community of scientists themselves constitute "the condition of the possibility of natural science" and are not simply directed towards securing the existence and development of scientific activity (CONNERTON, 1976: p.35). The ways in which the methods and procedures

of the sciences are constituted introduce the perspective of cognitive interest in technical control over objectified processes (HABERMAS, 1968/1971: p.309): "...the logical structure of admissible systems of propositions and the type of conditions for corroboration suggest that theories of the empirical sciences disclose reality subject to the constitutive interest in the possible securing and expansion, through information, of feedback-monitored action". The fact that one important criterion for the acceptance of theories is often taken to be their ability to predict future occurrences indicates the knowledge-constitutive interest in instrumental action. Thus (ibid.: p.313): "knowledge equally serves as an instrument and transcends mere self-preservation". Contemplative activity owes its existence to the human interest in autonomy and responsibility (ibid.: p.314) : "Reason also means the will to reason".

Habermas' account of "critical theory" has both epistemological and methodological, and practical and political implications. The former involve considerations of methods of investigation of social life that are distinct from those employed in the sciences of nature. They assimilate the phenomenological contribution regarding the interdependence of the knower and the known in the process of cognition as a social act: the subject/social scientist engaging in perception of his object/social reality is included within the process of cognition which itself is a social act. Further, they incorporate the insights provided by linguistic analyses and hermeneutics, in the context of the theory of communicative competence (HABERMAS, 1968/1971: p.310): "the understanding of meaning is directed in its very structure toward the attainment

of possible consensus among actors in the framework of self-understanding derived from tradition. This we shall call the practical cognitive interest, in contrast to the technical" of the empirical-analytic sciences. In this view,there are three categories of possible knowledge (ibid.: p.313): (i) scientific knowledge consisting of "information that expands our power of technical control", governed by technical interests; (ii) hermeneutic knowledge affording "interpretations that make possible the orientation of action within common traditions", involving practical interests; and (iii) critical analyses that remove constraints imposed on the consciousness by hypostatised powers, guided by emancipation interests.

The practical and political consequences of "critical theory" are significant in that they are founded on a perspective of normative change rather than one of equilibrium and order in social affairs. The notion of critique in the form of social criticism is a central part of these approaches. It entails revealing hitherto obscured constraints imposed by structural elements of social life which vary in history. The search for the discovery of underlying structures and mechanisms that are generative of constraints imposed on social life would reveal, say, that society is made increasingly dependent on science and technology. The latter's constitution as a primary productive force renders it part of society while at the same time scientific criteria of rationality are employed in deciding on the rationality of order and characteristics of societal processes. This is a self-reinforcing circle which produces mechanisms for justifying and legitimating societal organisation and a particular distribution of political power

(CONNERTON, 1976: pp.37-38). Having placed itself beyond social control, the scientific/technological system gives rise to mechanisms which render the relation of man and technology one of human adaptation to a self-legitimating technological system rather than one of human direction of such a system.

Thus, it is said to restrain the capacity of the individual and the social group to intentionally participate in the direction of their destinies. There results a kind of society which exhibits a social order dominated by "techniques": society is becoming an ensemble of social organisation whose sole reason for existing is to further the interests of some "technique" and its human functionaries who expect to gain from it. However, the original ends of those "techniques" appear to be lost in the process of their operation. This leads to the self-perpetuation of organisations, institutions, and methods (and of those who operate them) which were originally invoked to solve some specific problems or to provide some service. It is said to be characteristic of bureaucracies that they typically end up existing only for their maintenance rather than for the performance of the particular service for which they were initially instituted. Thus, the scientific/technological world of "techniques" and its maintenance becomes an end in itself. To the extent that it constrains the free expression of social life it introduces a form of domination which may be said to be rooted in the structural elements of the mode of production in society. The task of critical theory then becomes one of elaborating a critique of socially unnecessary constraints of human freedom in the context of advanced Western societies (SCHROYER, 1975).

Social criticism would be historical, resorting to history in order to assert traditions and events; it would be sociological in seeking to discover hitherto hidden, underlying structures and mechanisms, and processes generative of social phenomena; it would be self-critical in action in the sense that it would expose itself -- its findings -- to criticism from alternative points of view (FLETCHER, 1974: Ch.10). It would not restrict itself merely to describing and explaining how things came to be: criticism is concerned with how things could be and is aiming at making firm proposals about how things ought to be, subject to dialectical processes involving the social groups concerned. A critical social theory would be ultimately validated in actual social practice and so becomes a social construction.

What would a "Critical Theory of Planning" look like?

Habermas expounds a cogent critique of public planning in the context of his critical theory of society (HABERMAS, 1971: chapters 5, and 6). Examining the role of science, technology, and the rational attitude in the practical politics of decision making and planned social action he regards the type of planning based on a Weberian conception of "rationality" (WILSON, 1977: pp. xiii-xiv) as "purposive-rational action" which is concerned either with organisation of means or choice between alternatives and is aimed at"establishing improvement, or expansion of systems of purposive-rational action themselves" (HABERMAS,1971:p.81).

He refers to the views of his fellow critical theorist, Herbert Marcuse, regarding the way in which a conception of rationality based on scientific and technological criteria has specific political implications in the sense that it fosters "a specific form of unacknowledged political domination" (ibid.: p.82). Rationality in selecting one from a set of alternative policies, in application

of technologies, and in use of efficiency criteria in the formulation and assessment of systems of means which are conceived so as to satisfy given ends is said to lead to planning in a vacuum, divorced from considerations of the social context of interests: it is a planning which separates the theoretical and the practical. Because rationality so conceived directs planning towards preoccupation with technical control, it entails action which involves domination either of society or of nature. There emerges a fusion of technological planning with a form of institutionalised domination (ibid.: p.105): "Thus arises a perspective in which the development of the social system seems to be determined by the logic of scientific-technical progress .... This technocracy thesis ... can also become a background ideology that penetrates into the consciousness of the depoliticised mass of the population, where it can take on legitimating power. It is a singular achievement of this ideology to detach society's self-understanding from the frame of reference of communicative action and from the concepts of symbolic interaction and replace it with a scientific model. Accordingly the culturally defined self-understanding of a social life-world is replaced by the self-reification of men under categories of purposive-rational action and adaptive behaviour. The model according to which the planned reconstruction of society is to proceed is taken from systems analysis".

Although this "ideal" of"technocratic planning" has not been realised, it does serve as an ideological background -- a "negative utopia" -- for a politics and decision making which focuses on technical problems, by taking social problems as disguised technological ones, and removes questions of practice and interests relating to societal

ends. Habermas introduces a distinction between: (i) The institutional framework of a society. This consists of binding consensual norms which guide communicative action or symbolic interaction (defining reciprocal expectations about behaviour that must be understood and recognised by at least two acting subjects). It represents the sociocultural life-world. (ii) The subsystems of purposive-rational action which are embedded in the institutional framework. These determine actions in accordance with patterns of instrumental or strategic action, viz. governed by technical rules based on scientific knowledge (ibid.: pp.91-94). Now, "rationalisation" of action at the level of the "institutional framework" can only take place if constraints on communication are eliminated. This presupposes free dialogue, without any traces of domination, concerning "suitability and desirability of action-orienting principles and norms in the light of the sociocultural repercussions of developing subsystems of purposive-rational action" (ibid.: pp.118-119). In this process of "generalised reflection" particular institutions would be expected to modify their constitution in a way which goes beyond mere changes in legitimation (ibid.).

Examining the relations between the planner qua expert technician and the politician qua decision maker dealing with "practical" issues -- relations which bear on the question of interdependence between theory and practice -- Habermas distinguishes three "models". On a "decisionistic model" the functions of the planner and the decision maker are clearly separated. The planner attempts to secure rationality in the choice of means by applying expert technical, scientific knowledge; but the goals are given, and are established outside of the context of means arrangements. The politician

retains his decision making privileges (acts of the will) but "practical decisions cannot be sufficiently legitimated through reason. Rationality in the choice of means accompanies avowed irrationality in orientation to values, goals, and needs" (ibid.: p.63). This is said to result inevitably because of the postulated separation of questions of fact (the "theoretical") from questions of values, goals, norms, and practical politics (the "practical"). The related argument from neo-classical economics is the so-called Arrow's "impossibility theorem" (ARROW, 1951); (HABERMAS, 1973).(46)

The so-called "technocratic model" appears to have superseded the "decisionistic model". In this account, the politicians become agents of the technical experts/planners. Developments in systematic decision making techniques, such as systems analyses and decision theory, enable rationalisation of choice and so ascribe to the specialist a much more important role in planning. The planner objectively traces the implications in terms of costs or other consequences of various policies and rationalises selection from among alternatives by means of evaluation techniques which are presupposed to be theory-neutral and value-free. In this way the primary role falls on analysis and technical considerations and is removed from the realm of practical politics. The interests of society are accommodated in a decision theoretic context, rather than in the context of a dialectical relationship between the theoretical and the practical -- which presupposes enhanced and unconstrained communication between a technocratic intelligentsia of experts/planners-qua-decision-makers and society.

Habermas identifies certain weaknesses in this technological model of decision making and planning. He argues that (HABERMAS, 1971: p.64): (1) It presupposes in society the inherent need for technical advancement; it takes this as a societal goal to be attained rather than as an independent, self-regulating process guided by societal interests. (2) It assumes a "continuum of rationality" in the planning of and deciding upon courses of action which is impossible. For rational, value-indifferent methods applied to the solution of practical[47] problems may expand the possibility of technical control, but fail to make statements accounting for the "value systems" of society -- viz. social needs, objective states of consciousness.

The task of integrating questions of values and goals and considerations of objective necessity and means has occupied pragmatists such as John Dewey.[48] What Habermas refers to as the "pragmatistic model" (HABERMAS, 1971: pp.66 ff) postulates critical interaction between the expert planner and the politician/decision maker dealing with the practical aspects of resolving conflicts of interest among social groups, and problematic situations. In this "model", ends are not discussed and fixed independently of the means required for their satisfaction -- and hence independently of the techniques and methods of deciding on means specifications.[49] Pragmatists such as Peirce, James, Dewey, and C.I.Lewis assert that value judgments are verifiable in experience to the extent that they are implicit hypotheses about what is valued as desirable or enjoyable. They are tentative claims to knowledge of what is good or bad either for the individual or for society. Ends are tentative until they are tested experimentally for their consequences.

Scientifically informed discussion on ends and means based on reciprocal communication removes both the primacy of the expert on questions of means and the primarily ideologically informed decisions on ends. Habermas claims that there is an important difference between: (i) the testing of action hypotheses experimentally (in terms of their consequences); and (ii) the "practical confirmation" of the process of inquiry or method ("technique") in the context of "concrete situations" interpretatively clarified (ibid. : p.66). This is said to be ignored in the "pragmatistic model" -- though the criticism may be related to the different conception of "practice" held by pragmatists and "critical theorists".(50) However, Dewey does allow for interdependence of methods and techniques, and practical decisions.

Commenting on these three models, Habermas argues that in the "decisionistic" account the public that is being planned delegate responsibility for decision making to the politicians through the voting system. In this way, democratic choice emerges as "acclamation" rather than public discussion. Public choice is thus restricted to selecting the decision makers and does not concern directly the actual decisions which remain beyond public discussion. Hence power is legitimated but not rationalised. In the"technocratic model" this rationalisation does occur but at the expense of the democratic processes. Considerations of feasibility and objective necessity derived by expert technicians would dictate decisions to decision makers. As a consequence, the only contribution of the democratic process would be to condone or reject the expert "administrative personnel".(51) Moreover, in case of equal qualifications it would be indifferent to which"elite group" -- planners or decision makers -- wielded power. A technocratic administration where the roles of

planner and decision maker are both played by the experts would overrun the democratic decision making process.

The"pragmatistic model" overcomes these problems of incompatibility between democratic processes and planning as a form of rationalisation of public choice which arise in the other two "models". It is "necessarily related to democracy" (ibid. : p.67) though it cannot be applied to political decision making in modern pluralistic democracies in the form in which it is known(ibid.: p.70). It accomplishes this by taking the public and its value-orientations as mediators between action hypotheses and their experimental testing in practice. Communication and reciprocal guidance between planning and the "value-beliefs" (Dewey) of interest groups would be expected to take place in a harmonious social context and would be couched in terms of common sense.

However, Habermas affirms that this is a naive expectation. The kind of public participation and dialogue anticipated by the "pragmatistic model" would never be a realistic proposition. This is because of the insurmountable problems in communication stemming from the differences in the language in which technical statements of programmes of action and goals are couched (plan presentation) and the ordinary language spoken by the public in their everyday practical activities and projects. To translate the former into the latter in order to inform the mass public entails the risk of ideological distortion. Expression of technical/scientific results in terms of world view or "Weltanschauung" raises criticisms of ideology and results in the advocacy of separation of technical questions from issues of practical politics, i.e. separation of theory from practice. Such a distinction would be in agreement with the positivist account which stipulates

an autonomous and value-indifferent realm for the expert/planner.

Thus, this model (HABERMAS, 1971: p.70): "neglects the specific logical characteristics and the social preconditions for the reliable translation of scientific information into the ordinary language of practice and inversely for a translation from the context of practical questions back into the specialised language of technical and strategic recommendations". These essentially "hermeneutic tasks" emerge in the communication process between the experts and the politicians. More specifically, in the context of constructing programmes of social development and planning, the "hermeneutic tasks" involve the transition from practical questions of politics and decision making (goals, ends, objectives, value-orientations) into questions that are appropriately formulated by the technical experts (questions of means); and vice versa. During the dialectical process questions of means specification help crystallise and refine originally vaguely conceived and stated needs, values, and goals.(52) But there is also a movement in the other direction: needs, value-orientations, ends, goals emerge clearly only in relation to the technical possibility of their being realised. Recognising some practical need involves considerations of availability of techniques which make possible its satisfaction.

Having arrived at some programme of action which satisfies needs, values, goals and objectives, and having brought this to the consciousness of the public, it is necessary to relate it to the totality of the historical situation in which it has practical consequences. In this sense, this "critical theory" approach would first, guide research toward the objective context of social events and, second, explore possible directions of historical development.

In this endeavour, it cannot remain merely dialectical but has to resort to hermeneutic understanding of the historical whole and of the relation of concrete situations to it. In contrast, a purely scientific/technological approach to societal guidance and development allows no scope for historical transformation, but only for regularities and enduring relationships between things. These will hopefully reveal what consequences will ensue if certain externally determined[53] needs, values, interests, goals are to be satisfied by specific means, measures, action programmes. There results an ahistorical approach where (HABERMAS, 1970: p.91):[54] "history is projected to the level of universal contemporaneity and thus robbed of its real spirit".

Ultimately, the communication process between the theoretical/technical realm and the realm of practice (political decision making) is related to public opinion (HABERMAS, 1971: p.74): "Technical knowledge and capacity" is confronted with "tradition-bound self-understanding" which is to be grasped hermeneutically. To this effect ideal conditions of communication have to be established, free from constraints and domination. But there are problems in this communication process: the ability of the public to respond; the blocking of the free flow of technical information for a variety of reasons (e.g. in planning a new motorway, its proposed routing may not be disclosed to the public until some appropriate time in order to avoid fluctuations in land values or the emergence of speculative interests; or when particular development controls are to be introduced into some residential area which, if known well ahead, might adversely affect the housing market); the situation of the expert who is trained to address specialised audiences rather than the lay community; etc. However, informing the public of the practical consequences of technical

solution to their problems has to originate from the experts in their role as citizens rather than as technicians. The choice then lies between (HABERMAS, 1971: pp.79-80) : "a productive body of knowledge (which) is merely transmitted to men engaged in technical manipulation for purposes of control or (one which) is simultaneously appropriated as the linguistic possession of communicating individuals. A scientised society could constitute itself as a rational one only to the extent that science and technology are mediated with the conduct of life through the minds of its citizens".

By integrating the theoretical and the practical aspects of programming and planning societal arrangements it is possible to transcend the divide between means and ends. If planning restricts itself to technical interests of prediction and control in acquiring knowledge to apply it to problem solving operations, such knowledge would consist in predictive models and causal narratives of observable phenomena. This would enable investigation into the means appropriate to attain <u>given</u> ends but it would not contribute anything to the ends themselves for the latter would be arrived at externally. The result would be a clear separation of questions of means (theoretical) from questions of ends (practical) one aspect of which would be the distinction between facts and values. It takes the rationality of value systems to be accessible only in a purely instrumental sense by their efficacy as <u>means</u> towards <u>ends</u>, and logically by their inner consistency. The "critical theorist" would challenge this view of value-neutrality and would favour critical judgment of value systems. His "critical theory" would not restrict itself to merely observing the world in its empirical spatial and temporal appearances but also -- following the historicism of the early Marx, e.g. his "Capital" -- would endeavour to go

beyond observation into a critical investigation of the rationality of social institutions in terms of a conception of human needs, interests, and freedom. He would forcibly reject the notion of a fixed human nature and would emphatically maintain that values, goals, and objectives of action in societal affairs must be created from human practice through dialectical relations within objective historical situations. His dialectical process based on unhindered communication free from self- and socially-imposed constraints would not envisage rational ends, norms, values, etc. which have any intrinsic validity.

Thus, an adequate theory of societal organisation (and planning) on the "critical model" would need to proceed in three dimensions: (i) the economic sphere or realm of material production -- where it would attempt to account for the historical development and current form of the forces of production by revealing the structures and mechanisms underlying it; (ii) the political sphere or realm of institutional systems -- where it would seek to develop appropriate systems of organisation as well as specific techniques which enhance and rationalise the planning of societal affairs; and (iii) the socio-cultural sphere or realm of interpretative systems -- where it would attempt to understand hermeneutically, and develop and critically dissolve legitimating socio-cultural norms, values, and interests. Criticism would develop on all three dimensions and would contribute in revealing hidden forms of domination, institutional practices, and unrecognised constraints on communication, respectively.

Regarding the dimension of politics, the rational organisation and planning of increasingly complex societal affairs creates the need for the construction of systems of "purposive-rational action"

which would match the complexity of the social world. However, the augmenting complexity of systems of rational planning in turn raises questions of compatibility between such planning systems and unimpeded operation of democratic processes in terms of the role to be played by the public in the planning of their affairs -- an issue of public participation and mode of planning which enhances or restricts it.(55) Habermas approaches this problem in the context of a controversy which is at the heart of contemporary planning theory and concerns two opposing "paradigms" of planning: the pluralistic disjointed-incrementalist mode and the rational-comprehensive mode (HABERMAS, 1973/1976: Pt.III, Ch.5).

The former involves mainly a form of planning which is predicated on conditional forecasts of the consequences of intended courses of action and assessment of the desirability of such results given some goals. The latter takes a global, holistic view of its subject matter and involves mostly programme planning and systems approaches. Either mode is compatible with weak or strong forms of public participation, and hence four types of politics ensue: (a) incrementalist/non-participatory; (b) incrementalist/participatory; (c) comprehensive/non-participatory; and (d) comprehensive/participatory. In an incrementalist/non-participatory mode of planning, the inevitable conflicts that would result from the uni-directional relation between the experts and the public would be dealt with through various approaches to conflict resolution: concentration of negotiations on non-controversial goals, subdivision of planning concerns, etc. Such strategies are not necessary in an incrementalist/participatory mode. Further, in a comprehensive/non-participatory type political (practical) questions would be taken as disguised technical questions,(56)

conflict situations would be sidestepped, and eventual dissent of those who are affected by planned action would be either suppressed or ignored or guarded against. Apparently, this type of planning is characterised by elements which render it incompatible with a comprehensive/participatory mode.

Now, the view that contemporary complex societies require a form of comprehensive/non-participatory planning and political decision making is criticised by Habermas. This view is taken to be founded on the assumption that the administrative and institutional structure as a control centre in a highly complex society has to be shielded from both politicians and the lay public in order to enable the operation of procedures of rational planning and societal guidance upon which survival of the society would allegedly depend. But the capacity of the planning machinery to perform under idealised conditions of rationality would be unavoidably constrained by its environment, particularly by the dynamics of the economic system. Thus, it would face a property order which it would be unlikely to be able to alter significantly without revolutionary changes which might threaten the very identify of the society which is to be maintained by such planning. Further, in mobilising, motivating, inducing people towards collective, expertly fixed goals it would come into collision with independently developed normative structures which oppose the goals of the planning system. Hence the contention that rationality breakdowns can only be eliminated by instituting a planning system which is independent of society and assumes the leading role of steering its development trajectory cannot be upheld.

Now, the adoption of some conception of "rationality" is necessary in any theory of planning -- for the latter as a mental preparation

for action, presupposes some form of rational thinking. The view taken of rationality cannot be independent of the substantive content of such a theory of planning and the political/institutional context in which planning is to take place. Four levels of increasing rationalisation in the planning and control of societal affairs are distinguished in (HABERMAS, 1971/1974: pp. 270 ff). It will be attempted to relate these to the context of urban planning. The conception of rationality that enters into the so-called "decisionistic model" -- referred to above -- would correspond to a liberal democratic administration. Externally decided goals -- either with or without the active participation of the public -- would be satisfied by way of rational arrangements of means aided by appropriate, impartial, atheoretical methods and techniques. For instance, models of the urban structure could be employed as "value-indifferent","theory-neutral" instruments for experimental testing of various action hypotheses and the tracing of their consequences upon the subject-matter of the planning exercise. In this sense, the planner would assume the advisory role of the dispassionate and objective expert: he would employ his expertise and"objective knowledge", acquired by using objectivist methods and procedures deriving from the sciences, independently of interests and values both his and the community's. Both comprehensive and incrementalist modes of planning would be compatible with this account, though considerations of political autonomy might favour the latter. An idealised reconstruction of the "planning process" which employs such a conception of rationality would be the one put forward in (HARRIS, 1967).

Another level of rationality characterises a "weak programme" of policy science (57) which focuses on rational assessment and evaluation of alternative courses of action which satisfy externally supplied

goals equally appropriately in terms of technical considerations. The instruments employed in such assessment fall within the range of techniques of rational evaluation -- for instance, cost/benefit or cost/effectiveness analyses -- founded on the assumptions and criteria of neo-classical economics ("economic man" concept, utility maximisation, etc.). By so rationalising choice, technical questions are further separated from practical issues of societal values and interests whose minimal integration was allowed for in the first level of rationality, above.

These two levels of rationality of action remove values from the context of planning and restrict them to hypotheses of goals: if x is desired, then it may be rationally achieved by doing W,Y, or Z; but Z is the more efficient of these alternatives and hence recommended. Due to the acceptance of the principle of value-neutrality, a disjunction is forced upon man's consciousness between his "subjective interests" which -- though decisive for his orientation to action -- are reduced to sentiments, feelings, private thoughts that are unobservable and hence impossible to account for in "objective knowledge"; and "objective considerations" regarding the predictable, utilitarian, and calculable aspects of social life which, as observable, can be taken into account in "objective knowledge" informing rational action. The world is therefore seen as an "objective" reality, deprived of all those elements that are said to be basic to the specifically human status of individuals in society. As Habermas puts it (HABERMAS, 1971/1974: p.271): "all the other interests of the praxis of life are subordinated for the benefit of the sole interest in efficiency and economy in the utilisation of means".

A still higher level of rationality would take value systems and goals to be subject to technical control on the basis of a technocratic approach to planning. This sense of rationality is said to emerge in cases of strategic planning which involve the development of a rational programme of action under conditions of uncertainty in strictly competitive situations where there are opposing interests also articulated on a rational basis. Such situations introduce considerations of "system survival" which overrun practical questions of values and interests and result in a totally planned society. In the fictitious state of affairs in which the survival of a "social system" is taken to be the ultimate goal to which all value orientations are reduced, the decision making problem resolves to one of specifying the constitution of decision systems (institutions, social groups) so as to enable them to satisfy that basic goal. In this sense, all pre-existing and emergent value configurations recede in favour of the overriding end of survival which would involve formalised objectives such as stability and adaptability. The goal-seeking, goal-forming processes in social life are thus wholly subsumed under "quasi-biological" needs of the system. For society to reach this state of a self-regulating system the highest level of rationalisation would have to be aimed at. This would allow the automation and mechanisation of decision making functions.

Rationalisation at this level would affect norms and values and their relation to interests and goals but would not alter the existing basis of the economic system. Adaptation to crises in society would be accommodated in terms of changes in the systems of values, needs, and rules of conduct rather than by structural changes in the mechanisms of production. Thus, a society with a capitalist mode of production would still remain one even if it were faced by a series

of serious crises, though its values, needs and behavioural rules would adapt to crisis-resolving conditions. Even though this is an idealised and imaginary model of total rationalisation, the possibility to extend rational control to such extremes to cover all action realms indicates that, under suitable political conditions, it might become reality -- one that ought to be guarded against, according to "critical theorists". Rational, scientific, technological approaches to planning criticise ideologically charged, normative approaches to societal guidance and decision making. They advance the notion of rational control as a substitute and improvement on the latters' "dogmatism" and commitment. But rationality utlimately emerges as an end in itself, a self-legitimating process that is detached from social practice in that it focuses on objective considerations and tends to neglect essentially and irreducibly humanistic values in social life.

The preceding analysis of the function of rationality in systems of public action and planning of societal affairs suggests that the idea of rationality is itself based on an ideology which takes objectivity, value-freedom, and reason as ideals to be pursued instead of practical interests and commitment to normative change. However, there seems to be no "scientific" justification for either of these views which is independent of any prior philosophies.(58) The"critical theorist" would reject this claim and, being in favour of commitment -- especially to his own point of view -- would urge the planners to try and integrate the technical with the political aspects of their concern; their facts with their own and society's interests, values, and goals; their theory with their practice. He would advocate their active involvement, by way of dialectical processes, in re-awakening the critical consciousness of the people which

would result in the latter's emancipation from internally and externally imposed forms of domination: from alien structures of the system of production and of the system of institutions of government, and from definitions in the socio-cultural realm arising out of these.

The critical analyses that might be condoned by a "critical theory of planning" would concentrate on the following concerns:

(1) They would subject to critique and interpretation all spheres of social life that are accessible to reason and have a bearing on planning. This would suggest a holistic but also historical perspective, and the "oppositional" thinking involved would be aimed at revealing hitherto obscured structures and meanings in relevant aspects of social life. In this context, critical analysis would have as its starting point the normative perspective of change -- both structural and socio-cultural. It would question the premise that "urban problems" pertain to some distinctive "urban realm" with its own identity and autonomous rules and logic. This view would preclude the taking of "urban problems" as unrelated to the political economy of society, and hence would reject attempts aimed at their solution through social policy. Rather, its focus would be on social structure and the conditions which necessitate its change. Community development programmes, environmental protection areas, and other instrumentalities of a "social policy" approach to urban problems introduce a positive discrimination in favour of deprived social groups, and their implementation involves redistribution of facilities in space.

A critical approach would discount this emphasis on apparent phenomena and would seek to discover the underlying structures and mechanisms which produce the appearances. It would search for them in the system of

material production and the ongoing process of "capital accumulation" in Western capitalist societies -- thus keeping in line with Marxian social theory. The "real" problems of the city would not be those of physical environment and urban space in their purely physical dimension but rather social structural problems of economy, politics, and constrained communication among the people in the city. An investigation of "urban problems"which is restricted to any one of these three dimensions -- viz. placing emphasis only on economy, or on the institutional framework, or on interpretative aspects of human action -- would be totally inadequate. Structural aspects of the city which might occupy the"critical theorist"in planning would include: (i) a historical analysis of the development of capitalism in society,and of the State and its political economy in relation to the city (HARVEY, 1973), (CASTELLS, 1977); (ii)an analysis of the control of the labour force through planning policies (e.g. restrictions and inducements regarding location of industry; controls on the location of offices; provision of housing) (LAMBERT, et al., 1975); (iii) an investigation into the conditions of conflict between institutionalised interests regarding development of capital, planning, and social control, and the interests and needs of the urban population being controlled; and of the ways in which such conflict might be expressed in social life (e.g. protest movements) (PICKVANCE, 1976).(59)

Criticism would also be addressed to the current approaches to solving urban problems for concentrating on policy rather than changes in those structures and mechanisms that are "really" causally responsible for generating those problems. Such approaches would be characterised by: (i) maintaining a liberal pragmatic attitude to urban problems and seeking remedial solutions which are piecemeal and lack a general sense of direction,some guiding normative view of urban life, which

would aid in the fixing of priorities; (ii) concentrating on the contributions of the professionals and "urban managers" and neglecting the practical interests of the people being planned, thus reinforcing elitism and legitimating the language of objective rationality in decision making which separates technical questions from issues of practice and interest; (iii) searching for solutions within the prevailing institutional order without any critical assessment of its adequacy in coping with urban problems; (iv) focusing on constraints upon social life and urban process in the socio-cultural, economic, and spatial dimensions without linking them within a historical perspective of continuous development of the system of material production; and as a result limiting the search for data to the strictly observable; (v) instigating procedures of public participation in planning which do not address themselves to removing constraints on thought imposed by forms of domination in social life but rather seek to either record individuals' views and re-interpret them in the technical language of rational goal-formulation or -- on the model of the "new humanists" (DUNN, 1971), (FRIEDMANN, 1973) -- to establish a process of mutual learning through social experimentation, and so neglecting the practical aspects of the active political involvement of the planner in his dialectical relation with the planned; (vi) fostering an attitude of <u>pluralism</u> towards conflicting pressure groups pursuing specific interests and so appearing as interest-free.

(2) The critique would extend to the rational reconstruction of the conditions which make knowledge and action possible in planning. Regarding the conditions of understanding the people affected by planned action -- in a way which enhances communication -- it would be necessary to seek to understand the systems of rules which are

implicitly followed by social actors (in the form of actions, utterances, and other conscious operations) and establish the kind of knowledge that is required to competently apply such rules. In this way, "theoretical" knowledge would be obtained without altering the "practical" activities and conduct of individual social agents. This orientation towards hermeneutic understanding has, for critical theorists, important methodological implications for social inquiry. A critical theorist would affirm that the differences in the nature of the subject matter of the disciplines that study social life are such that the "methods and procedures of the natural sciences" are not applicable, in principle, to the understanding of the social world. As the subject of urban planning is people in their interaction with physical and man-made environment, understanding social life in the city would necessitate methods other than scientific, viz. methods that would be appropriate in capturing irreducibly humanistic aspects of the social lifeworld.

Given the nature of his subject matter , the planner could not be a neutral observer: in his investigations he himself constitutes part of the process of cognition as a social act. His methods and procedures of knowing would inevitably determine his perspective on the world and hence should be grounded in practical human activities or "forms of life" if they are to provide knowledge which relates to his social subject matter rather than to a morally indifferent nature. This view is central to the concerns of both Wittgenstein and Heidegger (MANDEL, 1978: p.260): "Steps and procedures determine our perspective on the world. They become the "rules of synthesis" by means of which a pespective is achieved. The foundations of knowledge become the activities of men that make knowledge possible. The logical structure

of knowledge becomes those steps and procedures which make knowledge manifest. This is a shift in direction shared by many phenomenologists, ordinary language analysts, and pragmatists alike". If this argument is accepted, then the direct tranference of methods and techniques developed in the context of the natural sciences to the context of urban planning cannot be taken for granted and has to be questioned with regard to the perspectives it introduces on social/spatial phenomena and the ways in which they account for the practical activities of both the planners and the planned.

A pespective of"critical theory" in planning would demand the employment of interpretative methods as indispensable in attaining an understanding of human conduct, of the meanings attributed to space by social agents, and of the ways in which such meanings might be imputed to actions. However, a purely hermeneutic approach would be taken as inadequate in providing the knowledge that is requisite as a foundation for action in planning. The objective system of social action would not be seen as restricted solely to the dimension of intersubjectively intended and symbolically transmitted <u>meaning</u>. There would also be aspects of physical reality which would be relevant in planning and would require accounting for. Constraints of external nature would entail considerations of instrumental control where a scientific/technical approach has often proved the most fruitful (e.g. the design and construction of public utilities; technology for controlling environmental pollution). Constraints of "inner nature" (consciousness) would necessitate illuminating the complex relations between politics, power and autonomy, institutional arrangements, and the system of productive activities -- with their corresponding underlying structures and mechanisms -- and the

historically situated existential individuals who pursue their everyday practical activities often unaware of forms of domination imposed upon their"form of life" by such structures and mechanisms.

Hence there are aspects of objective reality, not necessarily available to empirical observation, which should be accounted for in planning. The latter could not plausibly and intelligently restrict its pursuit of knowledge for guiding action to purely interpretative concerns of social life. Although planning could benefit from such insights into the meaning aspects of the social lifeworld, e.g. by the resulting enhanced communication between social agents -- including planners and decision makers -- planning is not <u>only</u> communication, but rather has to encompass the material foundations of social life as well. As regards the scope of intepretative methods in planning, hermeneutics appears to provide ways of resolving the tensions between the existential individual historically situated in some meaningful reality and structural wholes that may be identified in the socio-cultural, institutional, and economic arrangements in the city -- through its mediation between parts and whole. The rules of interpretation, however, would themselves be subject to the influences of other social processes, such as socialisation, power, social stratification, work. The rules of these structural elements of the city would not become available by means of interpretation. They would only reveal themselves through systematic participation and socially accustomed communications. In this context, dialectical processes assume particular relevance and replace empirical observation.

Due to the nature of his subject matter the planner is required by a critical theory to establish a relation with the planned such that artificially imposed criteria of objectivity, value neutrality, and disinterestedness are transcended. This relation would involve both parties in dialogue: the planner would discard observation as the sole determinant of his models and theories about his subject matter. A dialectical model of study would stress the perspective of communicative action which should be clearly distinguished from instrumental action aimed at direct manipulation and control without public participation and dialogue in planning. This separation of the instrumental from the communicative aspects of action is required because the former involve purely scientific investigation of the most appropriate, efficient, etc. combination of means that satisfies certain given goals established outside of the context of study of the means.

This introduces elements of authoritarianism and domination which are incompatible with communicative action. The latter is based on dialogue and involves understanding beliefs, intentions, motives, needs guiding the actions of social agents. Thus, it enhances communication in a manner which is said to be analogous with the processes involved in psychoanalysis, in the sense that people are being led through discourse to appreciate benefits and disadvantages involved in proposed theories of reconstruction of aspects of society that are taken to be unsatisfactory. Adopting the dialogue model of inquiry and communication in urban planning -- viz. advancing theses based on the needs and purposes that are felt by the planned, receiving antitheses, and eventually attaining acceptable responses and compromises which are put into operation -- renders the whole of the

planning edifice subject of the control of the public. Rationality is to be attained in this way and not through forms of institutionalised domination upon the lives of individuals which is accepted by them either because it is not recognised as such or because it is concealed.

Enhancing communication and dialogue through public discussion and critique enables removal of distortions in understanding. The communication process would be unconstrained when all individuals concerned have equal opportunities to participate in the dialogue. But this presupposes that those individuals would be willing, prepared, sufficiently interested to exercise their privilege to participate in the dialogue. Short of mass scale political indoctrination, it is difficult to see how critical theorists would induce involvement of the public in dialogue. The problems of public participation exercises in urban planning are so well-known as not to require reminding: indifference and apathy; selfishness, shortsightedness, lack of resources (time, funds, expertise) requisite for participation; disproportionate influence of vociferous, fully committed, or strongly placed groups in the negotiating context; and the like.

To remove these "distortions", on the critical theory programme of planning, would presumably require armies of psychoanalysts and some very perceptive "planners" who are not availalbe on the current curriculum of academic education in planning. Apart from such difficulties, the enormous task of the critical theorist would also include an investigation of the institutional and social structural arrangements that are conducive to such distorted and impeded communication. Thus, enhanced communication connects up with

an ideal form of life and so links planned action and dialogue which are respectively the theoretical and practical implications of separating instrumental/technical and communicative action.

By recognising that the realm of meanings and their interpretation in communicative action is not all that there is to be accounted for in social life in the city, a critical approach to planning would seek to come to terms with the interplay of "conceptual" and "intelligible" factors with the brute blind forces which are extraneous to the ideas and illusions of a culture (GELLNER, 1973: p.87). One way to conceptualise this interplay is to recognise both the context-dependency of any generalisations regarding such aspects of social life and the instability of the postulated relations over time: their time-dependency or "episodic" aspects. In this sense it would be quasi-historicist avoiding long-term sequences of historical transformation and concentrating on the historically specific and delimited holistic configuration of industrial society. It could allow properties such as irrevessibility, (60) practical inevitability, unidirectionality but would constrain these by accepting the uniqueness and singularity of the episode it refers to. It would take it as neither one member of a class of such episodes nor one link in a series.

Given these qualifications, the relations that would be sought would consist in discovering structural or institutional characteristics of some current state of affairs which would be taken as responsible for problematic situations <u>experienced</u> by social agents or groups in the city. The modification, change, adjustment, or total removal of such undesirable conditions would eliminate identified

dissatisfactions in social life. Coherent accounts of these relations that are taken to be generative of disturbing conditions -- but not causally generative as in the realist view of science and causation [61] could be couched in terms of "partly causal"[62] narratives [63] which would also make use of functional analyses. The latter would seek to investigate how particular forms of institutional arrangements emerged and how they contribute in sustaining some social collectivity; and explore systemic properties of action in terms of repercussions of unintended but not accidental consequences of action upon some whole.

Narratives inevitably contain -- even if only implicitly; even if only simple -- laws. Moreover, to distinguish between some narrative of action, and its context and consequences it is necessary to develop an understanding of relevant recurrent interdependencies concerning distinct aspects of events, their implications for conceptually or functionally linked realms of activity and their unintended consequences. Narratives would need to be plausible and coherent within some broader frame of meaning. They would draw their validity from that frame but they would at the same time constitute it.
If it is accepted to call such narratives "theories", the requirement of critical approaches for links between theory and practice would be satisfied if such "theories" are also related to practice.
The relation of knowledge to action upon which critical theory is founded entails the demand that such "theories" include some account of the way in which they are to be related to practical action.

But these narratives would not offer accounts which are restricted to past occurrences -- though they would draw extensively on these

and regard the ensuing insights as their integral parts -- but describe the way in which the future might unfold as a function of the role played by the narratives themselves in social practice (i.e. activity involving ethical and political considerations). Hence their validity would depend to a great extent on the way in which they are related to the satisfaction of human needs and goals. They would look to history in order to reveal how these needs desires and aspirations have emerged and understand the circumstances which preclude their fulfilment, thus making explicit structural conflicts and consequent dissatisfactions as contradictions within some prevailing social order. The purpose of a narrative so conceived would be to persuade, convince,and show that social discontent and thwarted aspirations and desires are to be interpreted and understood only in terms of the account of the social order that is put forward.

The terms in which such narratives would be couched would need to take account of the full range of <u>interpretative categories</u> that a humanistic social science specifies -- for instance, taking social action and human conduct as a result of individuals' intentions, motives, reasons, feelings, etc., which require interpretation rather than observation and are to be stated in terms that are intelligible to those whose conduct is being accounted for. But interpretative categories would not be the only ones to constitute a narrative for social structural and institutional aspects of social life would also be accounted for, in an integrated manner with interpretative categories. Furthermore, the condition that such a narrative be linked to practice can only be satisfied if the "theory" contains within itself a programme and sequence of <u>change</u> in those aspects of reality which the "theory" postulates as underlying the structural conflicts creating

disatisfactions and deprivations. But it would not be a programme of action along the lines of a policy. It would not require people to accept or impose on them the kinds of changes that it regards necessary.

Rather, and here seems to lie the crucial difference from a policy approach, it would seek to enable those coming within its scope to fully grasp their conditions and situation in the existing state of affairs as the product of structures and mechanisms that are inherent to and underlie that state of affairs. It would follow this approach rather than a unidirectional interventionist, or even a two-directional interventionist -- on the "public participation" model -- since it is required by the critical perspective to reveal to the individuals concerned the ways in which THEY can act if they wish to remove identified constraints and conflicts, and so change their ungratifying conditions as an aspect of changing the existing state of affairs which gives rise to these. Thus the function of a narrative in social practice would be a guiding and educational one. This is one of the main reasons why enhanced, unhindered communication is so important in a critical approach to planning. In performing such roles a "theory" would also need to be couched in terms which minimise or neutralise inevitable resistance to proposed structural and ideological change.

A first requirement would be to eliminate semantic problems by stating the "theory" in the ordinary language of everyday life. Moreover, critique of prevailing ideological beliefs which hinder the success of the "theory" would be aimed at revealing to the individuals concerned how the beliefs they hold are contradictory with their own

experiences, feelings, desires -- that their empirical self in space and time contradicts their "true" self in the ideal realm of the "theory", as already described above both in the Hegelian tradition (p.311) and in the tradition of normative organicism which is informed by it (chapter one). Finally, resistance to change could be overcome by demonstrating to social agents the ways in which structural changes normatively anticipated by the "theory" would be incompatible with currently held ideologies. Such social structural changes are to take place in virtue of the existence of the "theory" which reveals to social agents how they "ought to act". But the "theory" which advances the critique would also need to be self-critical in the sense of involving reflection on the planner's own theoretical and practical assumptions which may themselves be exposed to the dominating influences of some prevailing social and political order.

Self-criticism would involve not only the planner's ideological beliefs but also his epistemological and methodological presuppositions in studying social life and the way in which he delimits the boundaries of his subject matter -- i.e. whether his postulation of a distinctively urban subject matter is justified given his "theoretical" interpretation of structural change. Self-criticism would also face the question of which criticism is to count as relevant in the first place -- since it would be absurd to claim that any criticism is necessarily relevant. The contemporary relativist movement in philosophy originates from the state of affairs in which it appears impossible to obtain agreed standards as to what is critical assessment. A crucial test for acceptance of some theory for one inquirer may be taken as relevant but not crucial by another, and irrelevant by a third. Refusing to abandon a view in the light of strong criticism may be seen

as irrational by other critics; but it may also be claimed that the latter miss the main point of that view and that their criticism is not "really" one.

Obviously anything can be criticised, but the question of the valid criticism is a different matter. Is it possible to formulate objective standards for criticism? However, attempting to turn criticism upon itself and ask "why be critical?" entails acceptance that criticism is in principle possible. Asking for "reasons" for criticism implies being involved in criticism. Hence the attempt to stand outside of criticism in order to assess it involves remaining inside it -- and this is a logically absurd situation. But it could be argued that if it is not logically possible to "justify" criticism or a critical approach there is no harm in failing to do so providing it is recognised that acceptance of criticism is an element of some given cultural tradition. On the other hand, the justification of some particular critical theory would depend on the extent to which it enables unhindered communication in social practice and is translated into action; hence its "truths" would be socially determined, at least partly. There is no requirement for correspondence with facts in this version of "theory", only coherence within a frame of social practice which is both informed by the "theory" but also constitutes it.

The fusion of interpretative categories of a shifting social reality with the more enduring aspects of social structure that are accounted for by means of "partly causal" law-like relations and functional analyses precludes the linking of a critical theory with social practice unless social agents themselves are actively engaging in participation in the process of such linking. For a "theory" of this

nature could be justified only in the consciousness and self-understanding of the social actors. Consequently, it cannot be argued that such a "theory" could also be employed instrumentally, as any positive theory of social/spatial structure and organisation, to derive accurate predictions which will inform decision making. The very nature of the postulated law-like relations in a critical theory (see footnote(62), above) precludes such application. Moreover, the role ascribed to "theories" in the critical model takes these to become, if successful, integral elements of social life itself.

This would be attained through the illumination and enlightenment provided by the "theory" to social agents into the conditions which they ought to come to realise as detrimental to the fulfilment of their needs and purposes -- viz. a process of augmenting self-consciousness and adjusting ideological beliefs of social actors, and revealing hitherto obscured structures and mechanisms which underlie their problematic situations. This does not involve simply attempting to persuade the individuals affected by planned action to modify their views, as a policy scientist might seek to convince the population of the rectitude of some proposed course of action. For in this way people are simply persuaded to do something they did not approve of originally. The critical approach involves instead a process of self-understanding and developing consciousness in a way which enhances their ability to make their own appropriate choices: it assists the actors to help themselves and create their own destiny. It is in this way that the theory is rendered into social practice: by persuading those for whom the "theory" is to operate to adopt a new image of themselves and interpret their experiences in a different manner.

In addition, there would also be some form of "instrumental" rendering of a critical theory into social practice. This would involve applying its knowledge couched in terms of "partly causal" law-like relations and functional descriptions to instrumental action. However, there is no relationship between such cognitive elements and those of a "positivist"/instrumental approach to planning on the model of policy science. For the law-like relations are to be conditioned by the interpretative categories of social agents -- in terms already stated -- and hence do not determine the ways in which social actors will respond to external structural influences. The development of these law-like relations involves a normative perspective on social life and its enduring social structural aspects, rather than a detached and value-indifferent scientific approach. Such relations would not be expressed in terms of models of segments of reality which would be based on the principle that the truth of the 'status quo' would determine morally relevant and politically charged action for it excludes evaluation of that 'status quo' in terms of whether existing states of affairs are ethically acceptable. In the critical approach, applying particular law-like relations in "instrumental" action involves moral and political evaluation and ideology-critique: for structural aspects of social life that are assessed as ethically unacceptable and in need of modification and change enter in these relations.

The continuous dialectical processes involved in the realisation of a critical theory by way of controls introduced to change existing situations also differentiates this approach from the instrumental activities of policy science. The requirement for effective dialogue is not to be satisfied upon establishing agreement on a programme

of action. Rather it is to involve continuous monitoring of the views and interpretations of the people who are affected by planned action for the effectiveness of the theory can only be assessed against such views. In this dialogue there is mutual rather than unindirectional education from the planner to the planned; for the planner may come to realise that the responses which his efforts are evoking point to the need for changes in his "theory". Dialogue presupposes free unhindered communication and the opportunity to participate in it shared by all concerned. In this sense, it may make additional demands on social and political institutions which are already developed without taking into account such requirements.

Conclusions

The above outline of a "critical approach" to urban planning is a very rough and tentative sketch of the putative extension of the work of critical theorists, such as Habermas, to the more limited but no less important concerns of urban planning. The extension may not be as appropriate or as successful as critical theorists themselves would argue that it ought to be -- this may of course be due entirely to the shortcomings of this presentation. But there are many aspects of this approach that could make a valuable contribution to urban planning providing it is possible to meaningfully detach them from their context rather than accept the whole "package".(64)

For instance, the adoption of a normative perspective on the "genus" "moral and political action", of which "planned action" in the city is a "species", seems to be appropriate and if accepted will have

implications for the ways in which goals and means are to be interlinked in planning. The emphasis on continuous dialogue and enhanced communication is also an aspect of the relationship between the planners and the planned which has not gone unnoticed by the planners themselves. However the particular way in which a critical theory conceives of this dialogue may not prove ultimately feasible in planning for reasons already stated.(65) Nonetheless, the attempt to understand and interpret other people's intentions, motives and reasons for action would involve the kind of interpretative categories that are absent from contemporary planning.

The problem of interpretatively understanding other people is a difficult and involved one and it is not adequately solved in the accounts of critical theory. One is told that hermeneutic "verstehen" involves part/whole relationships, a historical perspective on action, the merging of contemporary with past viewpoints, the reconciliation of the phenomenological intuition with structural and historical aspects of some totality; and that the hermeneutic knowledge produced explores the conditions of its own objectivity, it constitutes its facts but is also constituted by them. These are very broad characteristics and are unduly abstract for adequately demonstrating the way in which one is to attain hermeneutic "verstehen" without moving into overt irrationality.

The same inadequacy of precision in describing the dialectical processes of reaching unconstrained consensus characterises most of the writings of critical theorists -- but these criticisms may be due to misunderstandings in the assessment of a piece of philosophical work which is informed by a philosophical tradition that is alien to the

works of English-speaking philosophers. However, there is an urgent need to inject a humanistic perspective into urban planning if the field is not to degenerate into one of those institutionalised activities that are most detested by the lay public. This cannot be restricted to merely attempting to improve the public image of the field through public relations exercises in participation. Rather it would have to involve a conscious effort to explore the possibilities of incorporating interpretative categories into the knowledge component of the knowledge/action continuum that planning is. This is no easy task and raises many subtle and technical epistemological questions which will have to be eventually faced and answered.

Another issue that seems to raise problems for a critical theory is the sharp separation postulated between the nature of the "social" and the "physical". That there are differences between the two which warrant adjustments in method of inquiry is not disputed by many today. But the ontological and epistemological division that ensues from, say, Habermas' writings is a view which would be contested by many serious workers especially by those who argue that all knowledge is guided by human interests.(66) What could be highly problematic in urban planning, as it would in other fields of endeavour, is the combination of a normative perspective on the enduring structural aspects of the city with the requirement for successful dialogue and understanding through communication in order to reach consensus. This could prove dangerous for it could easily slide towards a situation in which history is interpreted so as to secure consensus, viz. in the light of what people would like to hear rather than what the historical sources determine as evidence.

Another difficulty would be encountered in the process of procuring knowledge that is guided by so-called "emancipatory" interests. The view that the social critic would act in the manner of the psychoanalyst to reveal to the individuals concerned hitherto obscured aspects of their consciousness and thus raise their self-understanding of their personal conditions and modes of thought and life and change the latter through a critique of ideological beliefs (on the model of "you are a slave to your passions") does not come through very clearly and is not entirely convincing if not on ethical grounds, then on grounds of feasibility alone.(67) It is possible that the attempt to convince individuals of their misconceptions in their practical philosophies and beliefs would reach dimensions of propaganda and would be founded on some distorted conception of reality. But ideological critique is indispensable in planning and to the extent that it leads to liberation of consciousness from unnecessary restrictions it is to be systematically pursued.

The valid emphasis placed by critical theorists on the historical perspective of societal organisation is an aspect which if adopted in planning on a systematic basis -- rather than the haphazard historical review that often precedes planning studies and merely states dates and figures and ignores underlying processes -- would greatly enrich the quality and perceptiveness of knowledge in the field. But the distinction should be drawn between a clearly historicist approach -- as, say, in Marxian historical materialism -- and a quasi-historicist one. The former accepts inevitability of historical laws determining human behaviour and has been rightly criticised in (POPPER, 1945/1966) and (POPPER, 1957/1961). The latter does not accept such general laws, and takes an "episodic" view of historical change in society.

It regards each "episode" as a singular and unique event and thus constrains any quasi-historical laws that may be identified in its historical study. The implications from the adoption of a historical perspective in planning is that emphasis is placed on idiographic rather than nomothetic approaches to the study of its subject matter. There results a change of methodological and epistemological orientation in that the development of theories and models accounting for classes of regular law-like relations betweeen observables (a nomothetic approach) recedes in favour of historical narratives of action (an idiographic approach) whose time direction points toward the future rather than the past and which draw on historical material to provide plausible accounts of how the future might unfold given certain states of affairs.

Not all critical theorists would accept this part of a critical approach to planning. However, a critical approach is conceivable independently of the substantive and political contributions of the thinkers of the Frankfurt School as well as of Marxian social theory -- even though the latter provides the paradigm case for a critical theory of society, and the former provide the most complete articulation of critical approaches to social theorising to date. The main elements of such critical approaches are possible to abstract from the theoretical context in which they have emerged: (a) the requirement for interpretative categories (taking man as a social agent); (b) the need to reconcile action concepts with considerations of enduring aspects of social structure which often constrain the choices that are open to intentional social agents; and (c) the close and intimate links between theory and practice, facts and values, subject matter and method (method constitutes and

is in turn constituted by subject matter); these basic characteristics of critical theory may be adopted without a Marxian perspective on social life.

These appear to be valid concepts in the context of urban planning and it is thought pertinent to seek to explore more fully their implications for the approaches that are currently held in the field. The initial epistemological shock that might be felt by those who are not familiar with the dialectical or dialogue model of inquiry should not divert them from examining more carefully what may well be one of the most plausible alternatives to the empiricist account of scientific knowledge as applied in the social sciences.
The "truth" of a critical theory is to be determined by the reactions towards it of the individuals who are actively involved in its scheme of reconstruction and its claims to knowledge of social life (its interpretative, structural and emancipatory aspects).

6. Summary and Conclusions to Chapters four and five: implications for theory and practice.

The purpose of the preceding discussion was to examine the conditions under which the investigation of "scientific method" can be carried out. In particular, it concerned the problem of whether it is possible to maintain a view of methodology without entering into an analysis of the philosophical presuppositions that underlie particular methodological viewpoints. Given that the interests of this discussion lie with method rather than philosophical outlook, it would be natural to pursue a methodological approach in the study of "scientific method". However, a number of arguments have been advanced to the effect that it is doubtful (i)whether methodological and philosophical aspects of the process of scientific inquiry can be unequivocally distinguished from one another; and (ii) whether it is possible to pursue a methodological approach without due regard to matters arising from the philosophical implications of particular methods. Nonetheless, claims that such a clear distinction is possible can be maintained within particular philosophical outlooks.

Throughout the discussion, the main concern was with views originating in the social sciences; and this was prompted by the guiding interest of this dissertation which lies in that particular area. Obviously, talking about aspects of scientific inquiry entails considerations of certain issues pertaining to the natural sciences. As a result there is a certain superimposition of views originating in the one or the other field. It must be made clear that the structure of the argument should not be taken to imply agreement with widely accepted claims about the unity of method in the sciences of nature, on the

one hand, and of man and society, on the other hand. It merely recognises that such a complex of views exists, and selectively considers aspects of the methodological debate without offering any detailed account or critique of any position whithin it at this stage at least.

It is in this context of the social sciences, of sociology in particular, that the issue of the interdependence of methods and theory (of form and content of inquiry), and by extension, of theory and practical application of theory to policy-making, is brought forward. Moreover, the existence of the problem of language, and the influence of the latter on both methods and theories used in the study of social life is also noted within the framework of linguistic, phenomenological and hermeneutic philosophies which have given rise to a number of fresh approaches to acquiring knowledge of the social world. These approaches are concerned with the understanding of "subjectively meaningful" human action; and some of these attempt to view such action in its social and /or historical context . As a result of their philosophical orientation they come into marked contrast with "objective" social inquiries which are based on observation of overt human behaviour and explanation of such empirical phenomena by subsumption under general laws.(68) The emphasis placed on "subjectivity" or "objectivity" by each of these two main orientations respectively might be taken to suggest that they are advanced as clearly distinct "frames of meaning" within which methods, research procedures, and substantive hypotheses acquire meaning and are legitimated. The social theories that are developed within these "frames of meaning" could be said to presuppose some metaphysical basis associated with a "conception of man" (a "model of man") and

a method of inquiry which is complementary to such a "model". Mediation between these "frames of meaning" may ultimately prove abortive -- though attempts to this effect have been undertaken, e.g. by Max Weber, and Alfred Schutz.

A first step in the discussion was to attempt to clarify the meaning of "method" and "methodology". If "methodology" is taken to be a "body of methods", then there seems to be little difference between it and "method". But "methodology" as a process of study of methods and the conditions of their application is quite different from "method". Thus, it is appropriate to distinguish between "methods as systematic procedures of research",and "methodology" as a discipline dealing with logical and /or philosophical presuppositions underlying particular methods. In one view, methodology aids in the understanding of the process of research without necessarily prescribing strict rules for scientific practice. It acts as an instrument of advice on scope and limitations of methods of scientific inquiry. In another view, often associated with the philosophical outlook of Logical Empiricism, methodology is the "logic of science" or "scientific method"; it provides both a descriptive account of how scientific inquiry is universally practised and a prescriptive statement of how it ought to be practised.

The position that is defended here is one which recognises relations of interdependence between philosophical and methodological approaches to the study of the methods of scientific inquiry. Although the strong interaction between philosophical outlook and methodological approach is acknowledged, emphasis is placed on methodological issues in the ensuing discussion of "scientific method". But this

need not imply that methodology is taken to be philosophically-neutral and theory-neutral. It is an approach which is selected for the sake of discussion alone, and which will pay its philosophical and theoretical debts wherever necessary. The spectrum of views advanced by some contemporary philosophers of science, such as Kuhn, Feyerabend, and Hanson, has emerged as a reaction against received opinion that the aim of science is the systematisation of experience that exists independently of any scientific theories (HEMPEL, 1965 : p. 178).

Although this philosophical movement, reflected in the writings of the above philosophers, is not as united as it might be suggested 'prima faciae', a certain common ground can be identified and established. The following claims appear to fall well within such common ground : (i) that pervasive presuppositions are fundamental to scientific investigations; (ii) that theories, as ways of looking at the world rather than true representations or "pictures" of it, affect "our general beliefs and expectations, and thereby also our experiences and our conception of reality" (FEYERABEND, 1965: p.29); (iii) that theories influence observation statements (HANSON, 1958); (iv) that the traditional distinction between the "context of discovery" and the "context of justification" is problematic and needs to be rethought if it is to be informative (KUHN, 1962/1970 : pp. 8-9).

These views, if accepted, may have profound implications for the position to be taken with respect to the issue of the interdependence of philosophical outlook and methodology, of theory and methods of inquiry, but also potentially on the connections between an epistemology and approaches to politics and planning of societal

arrangements. In particular, these views question the possibility of formulating a set of norms or canons of scientific inquiry that are valid and applicable throughout the universe of scientific discourse, irrespective of the subject matter that is being inquired into; indeed, they suggest that it might be wrong to strive toward such a methodological ideal. This claim assumes particular relevance in the context of the social sciences (especially sociology), where it is acknowledged that it is important to relate methods of research to subject matter and to take methods themselves as a subject for investigation rather than view them as neutral, atheoretical instruments (DENZIN, 1970 : p.298). Although it cannot be denied that there is a pragmatic aspect of methods which justifies their being seen as mere instruments for performing specific tasks in scientific inquiries, it is impossible to fail to recognise that, in the context of the social sciences, particular methods tend to entail some theory or theories of instrumentation which may themselves be theories about society. That methods of social inquiry, and methodology must be viewed within a framework of the sociology of knowledge is argued convincingly in (SJOBERG and NETT, 1968) and (CICOUREL, 1964).

In this sense, methods of inquiry and the theories they presuppose can not be thought of independently of the subject matter to which they apply. They are embedded in some paradigm or way of looking at the world which renders their application meaningful. Such a meaning system would comprise views regarding : philosophical outlook (ontology, that is, assumptions about the kinds of things that exist in the world; and epistemology, that is, theory or theories of the nature and grounds of knowledge concerning its limits and validity) ;

substantive hypotheses advanced to account for aspects of the world; methodological conventions regarding inquiry and evidence ; and specific research procedures. Although certain theories, methods, and concepts may be consistent with more than one philosophical system there will inevitably emerge a level above which inconsistency must ensue.

A number of relatively recent works of social thinkers and philosophers show concern with the interrelationships between theory and practice, and with the role played by language in cognitive processes and in social life as a whole. The language used to express theories and methods is seen as a reflection of the "Weltanschauung", or way of looking at the world, within which theories and methods are developed. Because of its dual function as a means of communication and as a way of defining experience for its speakers language, it is argued, should be studied as a subject in its own right and not taken for granted ("we do not describe what we know ; we know what we are able to describe" is a rough account of one of Wittgenstein's points). This interest in the problems of language has filtered through from philosophy to the social sciences, in particular to sociology. An extensive and highly diverse literature has sprung during the last two decades as a result of such influences. It shows concern with action, meaning, and convention in the context of human social life, and recognises the intricate ways in which language is embedded in social practices.

It is in this context that the process of communication between social agents (the way people actually understand each other) has come to be recognised as a basic phenomenon of everyday life.

Numerous contemporary social studies show a tendency to disregard the "objective" facts of socio-economic development in favour of investigations of the "subjective" world views of individuals. In their search for the fundamentals or "essences" of social life, such studies move away from considerations at the macro-sociological level and concentrate instead on the understanding of basic rules of everyday communication and interaction; and this is taken to be a necessary approach for any type of social inquiry. The problem of comprehending subjectively meaningful actions of social agents is approached by the researcher by means of studying how individuals find a meaning in their mutual actions; how they interpret the others' as well as their own actions.

This approach is based on the understanding of social reality from the point of view of the actor, hence it is often referred to as the "subjective" approach. It is contrasted with the "objective" (so-called "conventional") approach where the supposedly detached observer/researcher investigating some social phenomenon considers the evidence (the factual data) and advances testable hypotheses purporting to explain it by subsuming it under some general laws. "Subjective" approaches are also called "humanistic" because they grant the human individual a special status in the world and take the self as an object of study (CAWS, 1970 : p.204). They focus on <u>meaning</u> in terms of <u>subjective meaning</u> to a person (or persons) rather than in terms of <u>non-personal meaning</u> , i.e. "significance" or "relationship", of a fact in its social structure. They attempt to perceive the relations between the various spheres of social life, and between these and the totality of social experience.

Thus, the notion of "meaning" is of central importance to these so-called "subjective" approaches to the study of human conduct. It does not denote linguistic meaning but is the result of a process of interpretation of the meaning which a situation, an episode, an action, a plan has for a social agent (or group of agents). It is integral to his consciousness and his language used to account for his actions. Being arrived at by means of interpretation, this meaning may be called "experiential meaning". Moreover, the description of such situations, actions, etc. in terms of their meaning is to be differentiated from their expression. Overt human conduct as a carrier of meaning is to be distinguished from its meaning for the agent : what one says or writes may be expressed in speech or text in a way which does not establish equivalence between the expression and the meaning originally intended.

Finally, situations, actions, plans, etc. have meaning in some context in relation to the meaning of other things; changes in the meaning of the latter may have implications for the meaning of the former, and this should be taken into account in the process of inquiry. As one writer puts it (TAYLOR, 1976 : p.165) : "Experiential meanings are defined in fields of contrast, as words are in semantic fields ... The range of human desires, feelings, emotions, and hence meanings is bound up with the level and type of culture, which in turn is inseparable from the distinctions and categories marked by the language people speak. The field of meanings in which a given situation can find its place is bound up with the semantic field of the terms characterising these meanings and the related feelings, desires, predicaments".

The epistemological relativism that such a position entails, that is, the dependence of all knowledge of social life on social, cultural, and historical context is taken to be a major inadequacy of this approach by its critics, while it is not regarded as problematic by its proponents. The latter take it instead to be a positive factor of the cultural sciences and argue that relativity does not render the notion of "truth" irrelevant. But their conception of truth bears no relationship to the "truth" of knowledge acquired by adhering to the principles of scientific inquiry ("scientific method") -- i.e. truth as correspondence to empirical reality. The hermeneutic method of "verstehen" has as its task the discovery of a "truth" which is not attainable by science.(69) The problem of "objective" knowledge of social life, which this approach is faced with, is resolved by redefining the notion of objectivity for the social sciences in a way which recognises that it is impossible to eliminate the "ego", i.e. the personal perspective, from social inquiry.

This has epistemological implications for the process of perception which is taken to be perspectival. It is socially and situationally conditioned; and prejudices are inevitable accompaniments of all experience. Now such views are not totally alien in the context of the philosophy of science. Indeed, views that reality, though non-mental or outside the mind -- i.e. the reverse of what an idealist might claim -- can only be described from some point of view ; that there are different ways of looking at reality, none of which is more correct than the others, are common in the "newer" philosophy of science. In particular, the philosophical outlooks known as conventionalism,(70) instrumentalism,(71) and pragmatism(72) may be associated with such views (LACEY, 1976 : p.86) -- though they might

differ among themselves in terms of the specific claims they make. Hermeneutics as expounded in, say, Gadamer's work, does not provide for reliable criteria for assessing the rightness of the inquirer's understanding of the social situation, although it may be said to guarantee the coherence of its historical material. But it is difficult to see how this approach will provide reliable knowledge of human social life without due regard to the structural aspects of the lawfulness of the subject matter of the interpretative process.

The presence of a tradition of philosophical idealism is very strong in the insights gained by social science's association with linguistic, phenomenological, and hermeneutic philosophies. These insights come into opposition with empiricist philosophies the methodological embodiment of which, so-called "scientific method", has been traditionally emulated by the social sciences in their attempts to produce knowledge of the social world comparable in validity to knowledge obtained in the sciences of nature. The ongoing methodological debate in the social sciences is one outcome of the recent movement towards idealist theses in the study of social life; with the resulting strong criticism against established empiricist (so-called "conventional") scientific approaches as being "objective" at the expense of neglecting important "subjective", "meaning" aspects of human conduct.(73)

The Cartesian dualism between mind and body, between the spiritual and the material, is at the centre of one of the perennial problems in philosophy with ramifications into the social sciences regarding the so-called "methodological debate".(74) The philosophical discussions extend into considerations of the most appropriate

methods to be employed in the study of spiritual or mental phenomena -- to the extent that their existence apart from matter is accepted -- such as phenomena of culture, of consciousness, of social interaction and human conduct. In some views, these phenomena are taken to be sufficiently distinct from physical phenomena of nature as to require methods of study peculiar to them. The methods and procedures of the natural sciences are claimed to be inadequate in capturing the irreducibly mental qualities of human phenomena.

Those who reject the dualism of mind and body in favour of one category consisting of the latter -- materialists, naturalists, physicalists, behaviourists, not all of these terms meaning the same thing -- have no reservations towards applying scientific methods, rules and procedures in the study of social life.(75) However, they differ as to their conceptions of "the methods and procedures of natural science" which are not independent of their views of science. Nonetheless, they do seem to share the rejection of idealist views on the nature of cultural, social and human phenomena. The latter take these phenomena to be expressions of <u>ideas</u> about reality -- and hence spiritual in nature -- which cannot be independently observed in an empirical sense, but can only be <u>understood</u> interpretatively. They are to be grasped in their historical and/or cultural context, according to the rules of language and form of life obtaining in that context, much like a hermeneutic problem of grasping the meaning of esoteric, mystical, or religious texts.

Those who oppose the above view reject materialism. This results in taking the intentions, purposes, motives, desires, etc. that underlie the observable behaviour of social agents as <u>mental</u> acts in

the minds of human actors. They are not "things" available to observation hence their investigation is said to require non-empiricist methods, say, procedures of "empathetic understanding" in which the social inquirer would attempt to re-experience and re-live the private worlds of the actors, and so reveal the mental causes of their actions. This conception of "verstehen" was developed by Dilthey and has been extensively criticised. It is usually charged for ignoring the potential important influences that the world of the inquirer, from which he is required to somehow abstract himself, has upon the whole exercise of "verstehen"; and for the assumption that the encounter itself with the subject of interpretation does not change the inquirer's own world (HESSE, 1972: p.286). It is argued that intentions, meanings, motives, do not pertain to hidden and private worlds of individuals' minds but are ways of characterising observed actions.

Thus, human action may be accounted for by placing it into a purposeful schema which would render intelligible the way in which the action was performed in the light of the actor's physical and mental conditions: his social and physical situation; his beliefs, values, norms; his needs. In this sense, interpretation of an individual's actions would involve demonstrating the <u>reasons</u> why some act took place: an approach that would require a teleological rather than causal model of explanation (WRIGHT, 1971: Ch.3). But placing the individual act within a broader context (i.e. some "whole") of the actor's beliefs, goals, circumstances, etc., does not complete its interpretation. In addition, the context itself would have to be inquired into -- in the light of the particular act which has occurred within it -- as part of the oscillation process between part and whole that

characterises hermeneutic approaches. Investigation of the social context of some action would revolve around the specific rules and conventions obtaining in it.

For instance, actions involving urban renewal and redevelopment can only have intended meaning in a social context in which there are constitutive rules for urban planning; rules which enable intelligent distinctions to be drawn between the act of demolishing buildings, say, as part of an exhibition of vandalism, or madness, or sadistic fun, from the same act as part of a planned programme of improvement of urban housing conditions. Rules of this kind in effect constitute the possibility of claiming that a particular act takes place. Take "social practices" such as the Stock Exchange, the housing market, the justice system of juvenile delinquents, etc. It is not possible to refer to some act as "stock transaction", "purchase of a house", "decision of panel members in Children's Hearings" if there are no rules which constitute what is to be "Stock Exchange", "housing market", "panel members of Children's Hearings".

These rules of "practice" are implicitly and unquestioningly accepted when referring to the above acts. Hence understanding an action presupposes: (a) grasping the"form of life" or "practice" in which it takes place; (b) clarifying the rules that constitute that practice; and (c) relating these to other rules in society. In addition, the existence of "social practices" presupposes a set of shared meanings, conceptions, definitions, without which they would be inconceivable. For instance, the practice of commissioning an architect to design some building presupposes a frame of shared meanings, etc., regarding, say, conceptions of property rights and

building regulations and standards; acting so as to meet the client's brief without jeopardising professional integrity and the principles of design; reconciling aesthetic requirements and budgetary constraints; the need to meet deadlines; and the like. Such shared meanings may be said to constitute a social practice. It is in terms of these that social agents act and communicate.

There are many difficulties involved in attempting to discover what these constitutive, shared meanings are for some particular"social practice". A widely practised approach is to carry out "social surveys" among relevant samples of population -- which presupposes an empiricist epistemology. This approach is criticised for failing to accomplish its objectives of revealing what the shared meanings are. Since it is in terms of the meanings sought -- viz. in terms of the questions that they are being asked -- that individuals will provide accounts of themselves and of their actions, social survey's take for granted the constructed categories of the inquirer and impose these on their subject matter. Thus they presuppose precisely that which they seek to discover, that is, the framework of constitutive meanings of ordinary language and experiences.
The conclusion of this critique suggests that inquiry into meanings and beliefs may be carried out intelligibly only if the inquirer places himself outside the frame of ordinary language and attempts to construct alternative conceptualisations which do not take for granted the meaning categories whose discovery is sought.

Regarding, say, the "social practice" of the housing market, the inquirer should seek to reveal the meanings that affect that "practice" -- e.g.conceptions of ownership, of acting so as to obtain the highest fair

price for the property bought or sold, and the like. In this way, he would be able to discover how the apparent behaviour that he observes makes sense in terms of the constitutive meanings of that "practice". Thus, he would make available the particular conceptual scheme which directs and informs actions in ways in which these make sense. This conceptual scheme, system of beliefs, or world outlook reflects the notion of a "whole" in which particular sets of constitutive meanings are interlinked. There results a systemic perspective on social action -- in its abstract characteristics rather than in detail, for the proponents of this view would not associate themselves with system concepts.(76) Grasping such a "whole" involves associating the constitutive meanings of some "practice" in a society -- e.g. the housing market -- with other sets of such meanings pertaining to that society -- e.g. the land market, the travel to work, leisure and recreation activities -- and thus discovering the grouping and structuring of meanings in forming a "Weltanschauung" or world view.

To achieve this movement from "part" (the specific "social practice") to "whole" (the system of basic beliefs in society) necessitates understanding of shared views of the world, society, culture, man. More specifically to the context of urban planning, it would involve understanding of views such as: (i) what it means to live in a house with garden as opposed to a flat in a high-rise block; (ii) what is the importance of being able to drive to work instead of having to wait for public transport; (iii) what it feels to be the owner of your house rather than a council tenant; and more general views regarding: (iv) what is recreation rather than boredom and depression; (v) what is the meaning of environmental amenity, privacy, the

"good urban life" as opposed to land, air and noise pollution, overcrowded living conditions, the stress of urban living; (vi) shared views on community, public services, care and welfare, conditions at work; (vii) conceptions of the authority that planners should have over individuals' lives; etc.

In order to make transparent the obscured, taken for granted, shared meanings and assumptions about the world in general, and urban life in particular, it is necessary to reveal the implicit frame of meanings which defines social and natural realities in the particular ways in which the actions that are to be interpreted make sense. This is an approach which would require adoption of a philosophical perspective on social life in attempting to sketch frames of meaning and seeking to disclose the underlying conditions that render social action meaningful in some frame of meaning or social context. To remove such a philosophical perspective from social theorising is said to lead to the separation of questions of knowledge from questions of social action, practice, and values.

Interpreting meaningful human conduct in its social context brings to light implicit and taken for granted assumptions of actors involved regarding, say, the way in which they construe symbolic relations, or the kinds of criteria of "rationality" that they employ in making decisions in everyday life; and relates the importance of particular acts to some totality so as to enable understanding which was hitherto unavailable both to the observer/interpreter and to participating members of social acts. As stated above (p.369), this is an exercise not unlike learning a language for meanings of acts are defined as words in semantic fields. Faced with the sounds and

symbols of a foreign language -- or the rituals and social practices of some alien culture -- the inquirer has to make sense of particular signs, words, expressions, sentences, texts (in ascending order of complexity) by becoming familiar with the language as a whole. This is not to simply arrive at lexical definitions of unknown words, etc. but also to understand the underlying rules of grammar and sentence construction peculiar to that language which constitute what is to count as a meaningful utterance.(77) The Wittgensteinian notion of language as a "form of life" carries particular weight in this analogy.

There is thus a dimension of <u>communication</u> between the inquirer and those whose actions are being inquired into. Since interpretation ought to result in understanding of the latter's actions in the context of some culture or society, the possibility of communication ensues because the investigator has learned his way in that culture and can engage in intelligent dialogue with its members. Dialogue involves interlocutors understanding each other's language -- or form of life. But dialogue is a two-way process and therefore the inquirer both influences and is being influenced by the subjects he studies. In one set of views, the only true account of how social action comes into being, and what its real nature is, is to be provided by the social agents themselves. This seems to be true in the sense that what social actors believe must be the motivational "force" underlying their actions -- assuming that beliefs and actions are not independent of one another. It also cannot be true to the extent that it is not certain that what the social agents believe to be true is in fact so. False beliefs in actors' minds may also give rise to actions.

A methodological approach that denies the inquirer the prerogative to probe the validity of beliefs of social agents in studying their actions would result in impoverished, often erroneous results. Thus, interpretation is to involve dialogue: it is to be a two-way process. Uni-directional processes of investigation, viz. in terms either only of agents' accounts of their actions or only of the inquirer's construals of such actions, would not provide a complete account of the situation. The interpretative process is further complicated by the fact that the accounts given by agents of their own actions are already interpreted by them in the sense of being "glossed over" in the light of their views of themselves and others. The task of the investigator then becomes one of interpreting already interpreted material hence he is involved in a "double hermeneutic" process (GIDDENS, 1976).

By being able to communicate with those whom he studies the inquirer opens up new directions and perspectives on the world. Both he and the social agents are enlightened as a result of dialogue and are able to grasp the implicit frames of meaning, presuppositions, and hitherto obscured rules directing their actions. As a result they may decide to modify their beliefs, value assumptions, practical philosophies. Dialogue is entered into in order to reach consensus. The knowledge that ensues is assessed by its relevance in attaining consensus, i.e. enhanced communication and understanding. Thus there is a <u>practical</u> aspect in the character of interpretative or hermeneutic knowledge to the extent that "it is capable of sustaining a moral community" (BARNES, 1977: p.17) -- what Habermas refers to as the "practical" guiding interests of hermeneutic/historical knowledge (HABERMAS, 1968/1971).

The knowledge that is procured by interpretation and understanding of social action through dialogue is useful in "social practices" such as urban planning for it can be applied to social life. Its contribution consists in enhancing communication among individuals within some social context and between different contexts, and removing obstacles to and distortions and false beliefs from understanding and acting. It enables those involved in successful dialogue to see themselves in new ways and act accordingly. There follows that it is conceivable to adopt an interactionist perspective on urban planning which would be founded on the main principles of an interpretative/hermeneutic approach. It would not be a perspective that stresses direct action upon some subject matter, with a view to effecting desired changes, independently of that subject matter.

Rather it would involve engaging in dialogue and communication to reach consensus and understanding; to illuminate concealed distortions of everyday life which underlie problematic situations; to come to know the rules, norms, and principles directing action -- so that proposed planned action is not outside the frame of meaning within which social action makes sense; and in the light of knowledge so created to come to look upon the world from a modified and improved viewpoint which will inform future action. Hence planned direct action by a centralised authority in a social vacuum is replaced by a process of decentralised pluralistic learning through dialogue. In this way, it becomes possible to come to recognise problems which give rise to differences of views, divergence of opinion and arguments, and distortions, and attempt to collectively and harmoniously remove or improve upon them thus fulfilling expectations and "fixing beliefs".(78)

Individuals are assisted through communication and discourse to see themselves in different ways and so take themselves the requisite steps to change disturbing and problematic conditions in their lives: conditions that gave rise to the dialectical process in the first place. Successful dialogue, viz. reaching consensus and harmonious communication is the test of the "truth" of interpretative accounts for only then do they cohere and make sense within some social context. Interpreting actions which are obstructing communicative interaction appears to be the main task of this approach. A plan as an action hypothesis which is put forward as an interpretation of what the individuals concerned really need in order to change problematic conditions is only regarded successful if it is accepted by those individuals as a potentially true account of themselves and their needs, wants, desires. Thus, a proposal for planned action is appropriate only if both the planners and the planned come to speak the same language, and hold convergent views on the actions, beliefs, purposes, and needs of the planned. This requires convergence and reciprocity of perspectives between planners and the planned. Plans are to have meaning and consequences for the planned and the extent to which this is the case can only be revealed by the understanding of those concerned.

Aspects of the interpretative approach to social studies may be identified in the work of the so-called "new humanists" regarding the planning of societal affairs (DUNN, 1971), (FRIEDMANN, 1973).(79) They draw on Mannheim's historicism and evolutionary perspective on society and employ a learning process analogy to characterise evolution as a process of social learning. As a stage in social evolution planning makes use of knowledge of society to guide its

development. Their approach transcends the fact/value dichotomy and requires planners to explore the ethical content of their goals for action (knowledge, or theory, originating from the expert of planner is to be related to ethics, or "practice"); but also politicians to seek to relate their "practical" concerns with scientifically valid knowledge. On Friedmann's account, the conception of a learning society necessitates a compatible view of societal guidance and action. Planning on the technological model of a policy science is criticised and its replacement is advocated.

The proposed alternative consists in a decentralised structure composed of several units -- a pluralistic arrangement -- in which project-orientated groups attempt to establish and enhance uncoerced communication and dialogue with the planned and promote mutual learning.
By proposing a dialectical relation between knowledge and action, between theory and practice, social experimentation becomes possible in which action hypotheses are tested in relevant social contexts and so are subjected to the possibility of being proved misconstrued accounts of goals, purposes, desires, values, of the individuals concerned.
The latter's critical view of society and self-reflection and criticism guides the process of reaching consensus on arrangements of means to satisfy certain ends, but also on the ends of action for they are both to be assessed concurrently and continuously, in the dialectical process involving communicating planners and planned.

The planner who is in communication with the planned puts forward his point of view as an account of problematic conditions, and makes transparent to the individuals concerned hitherto obscured aspects of their situation. His role is educative for as a result of

consensus reached in dialogue social agents may come to see those aspects from the planner's point of view and so render this a "true" account of their needs. Thus, there is psycho-social development of the planned in the course of their participation in dialogue and socialised learning. But learning is to be mutual and hence the planner may acquire information from his subjects which will modify his point of view since his account will have been shown invalid in the absence of consensus in dialogue.

In terms not specific to the new humanism in planning, interpretative approaches to the study of social life and their conception of "practice" -- or translation of knowledge into social and political action involving normative considerations -- may be said to suffer from the failure of idealist approaches to allow for structural and material aspects of society which create the conditions for social action. They introduce a perspective on social life which eschews considerations of the ways in which the physical environment impinges upon man and moulds his beliefs, his practical philosophy and his ways of coping with the problems of everyday life and accomplishing his projects. Unless the conditions of such man-environment interaction are taken into account, the social agent's beliefs about himself and others cannot be fully grasped for they also arise outside of the limits of the realm of symbolic interaction.

Consequently, speaking of enhancing communication and promoting dialogue in order to reach consensus ought to be based on an analysis of the structural conditions in which successful communication processes could be instigated. In the absence of such considerations, the formulation of some shceme or interpretative account (or action

hypothesis) and its presentation to the individuals concerned in the expectation that it will enlighten them and make them adopt new ways of looking at the world seems to be constrained from the start. The reasons why individuals insist on maintaining their beliefs and practical philosophies are many and cannot be enumerated and analysed here -- though some brief mention of them was made above (pp.273-275).

Social agents do tend to hold on to their views of their situation and of how this could be improved and hence resist being "educated" and "taught" what they ought to think -- given uncoerced communication. This is bound to block dialogue and the reaching of consensus for such are the reasons why disagreements emerge between individuals in everyday life. Thus, if there is no structural dimension in the knowledge contained in interpretative accounts it will not be known how some social structural characteristics impose certain constraints on the unlimited action choices of individual agents and evoke some particular response rather than any other. Moreover, the intentional actions of individual agents do not always produce strictly intended consequences but also result in many unforeseen repercussions for some social totality which are not captured in interpretation of social agents' accounts of their intentions, motives, reasons for action.

One kind of unintended consequence is that social actions tend to reinforce and maintain community structure which is not something as fluid as ideas in people's minds. By seeking to establish coherence of interpretative accounts within some frame of meaning or context and so reach consensus in dialogue an interpretative approach appears to implicitly accept and pursue "order" and continuity

in society which may not be warranted given the many structural conflicts that can be recognised in any society. This effort to establish consensus and continuity may be taken to suggest political characterisations of conservatism in reconciling social agents with the 'status quo' of the existing social order. However, others impute to these interpretative approaches pluralistic and even radical political orientations.

The charge of conservatism is said to be justified since there is no critical perspective of existing states of affairs: the orientation to the planning of societal arrangements is one of order rather than change. Taking all problematic situations to ensue from breakdowns in communication between interacting individuals, interpretative approaches reduce all communication difficulties to false beliefs and ideas that individuals have regarding the meaning they ascribe to their actions and world views as well as to those of their interlocutors. The interpretative task of illuminating hitherto concealed distortions in beliefs and understanding of meanings -- and so modifying and/or removing the erroneous views and action assumptions of the social agents concerned which will enable consensus to be reached once more -- may be regarded seriously deficient to the extent that it regards conflicts in social life as merely the outcome of false or distorted ideas which social agents hold of aspects of their social reality (FAY,1975: pp.91-92).

Thus, such idealist views,whenever they are advanced as theories of society,are themselves subject to criticism: that is, that they tend to preoccupy themselves with the problems of subjectively meaningful human conduct and neglect other, equally important aspects of human life concerning man's practical involvements in activities

based on material concerns. For it is not possible to ignore the argument that "... the social world is not only structured by language but also by the modes and forces of material production and by the system of domination" (DREITZEL, 1970 : p.xvii). This latter view reflects the thesis of the contemporary social philosopher Jurgen Habermas, who writes in the tradition of the critical theorists of the so-called Frankfurt School.

In his Critical Theory of society Habermas endeavours to bring together both material and meaning aspects of social life. Habermas' work is extensively informed by hermeneutic philosophy, especially by the writings of Gadamer. Hermeneutics attempts to comprehend -- unlike a pure phenomenology of the social world -- the historical perspective of social action as well as the structural context of meaningful action. Because phenomenology starts from the individual, it is criticised for failing to provide a way of grasping the supra-individual whole of a societal outlook or a cultural system. Hermeneutics claims to be able to remedy this inadequacy by : (i) retaining the phenomenological intuition through which it gains insights in the existential meanings of historical individuals, and (ii) grasping structural wholes, thus resolving the tension between structure and the existential individual (WOLFF, 1975 : pp.130-131).

Now, Habermas recognises the importance of language in social life and the significance of interpretation to all forms of social inquiry; and concedes that understanding is attained through discourse. However, he stresses that the study of human activity cannot be purely hermeneutic (or, for that matter, purely phenomenological). For the rules of interpretation of social situations, actions, meanings, etc.

are not invariant essences of the social life-world but are themselves subject to the influence of other social processes, such as relations of power, authority, and material production (labour). Although this is very much work still in progress rather than a finally elaborated statement, it seems that this direction of research is valid and worthy of further investigation. However, there are certain basic objections to the substantive content of the synthesis put forward by Habermas.

The difficulties that are often involved in fully grasping the meaning of Habermas' work may be attributed -- apart from imperfections inherent in any translation from a foreign language -- to the demands it makes on the reader in terms of knowledge of the particular tradition in German philosophy that informs it. His view of science emerges as an instrumentalist one : knowledge is not seen as the product of contemplative disinterested activity but as a social product of scientific community whose members apprehend reality in terms of instrumental interests of prediction and control (HESSE, 1972: p.285). These interests are taken to be integrally linked within the process of generation and evaluation of knowledge. Existing systems of instrumental activity are taken to impose corresponding organisational patterns on experience, and thus to determine what is to be regarded as "facts" or "data". "Knowledge constitutive interests" in forecasting and control form the foundation and justification of science -- the latter being the most highly developed kind of instrumentally oriented knowledge.

Human interests are seen as varied in Habermas' writings: they are not restricted solely to those that are instrumental but include

"practical"and "emancipatory" ones as well. These other interests guide the search for knowledge which is said to be as valid as scientific/instrumental knowledge. Thus "practical" interests inform hermeneutic/historical knowledge. "Practical"(and practice) is taken to refer to the ethical, moral, or political realm: what Aristotle refers to as "praktiké" (Nicomachean Ethics; bk.6, chs.2 and 5) which also comprises rhetoric and poetics. Practical interests also require collection and study of available data but such data are different in kind and less stable from the data of natural science for they arise out of human endeavour. In engaging in practical inquiry, interest is not only focused on what things are -- knowledge of which is not sufficient in itself for "practice" -- but also on what could be done about them. Practical interests guide hermeneutic/historical knowledge leading to improved communication and consensus among social agents. Moreover, "emancipatory" interests also guide their corresponding form of knowledge which involves critical activity as self-reflection and liberation from both institutionalised and self-imposed, hitherto unimagined or concealed forms of domination.

The differences between hermeneutic and scientific knowledge, both in terms of guiding interests of cognition and of subject matter, are pronounced in Habermas' account. Hermeneutic knowledge is to be assessed not in terms of instrumental results, as is scientific knowledge, but rather in terms of its success in enhancing communication and mutual understanding among human individuals and in promoting consensus.(81) Such knowledge is produced by interpreting thought and action as "meaningful stuff" which can only make sense if it is related to and coheres within some broader whole, some postulated frame of meaning. "Meaning" is not to be restricted to meaning in the epistemology of natural science -- viz. as

presupposing "an account of the empirical reference of terms and of their intensional connotations" (HESSE, 1972: p.278) -- but is to have "implications for the data that go beyond the external semantics of language" (ibid.: p.279). Thus the data of hermeneutic knowledge are said to be constituted by "meaning" for they are produced in intentional human communication involving use of language.

To obtain hermeneutic or historical knowledge involves a continuous movement between meaningful parts or "data" and a hypothetical "whole" or frame of meaning. The movement is circular -- the "hermeneutic circle" -- for the way in which the parts are looked at is determined by the hypotheses regarding the "whole"; and these are in turn intelligible only in the light of the parts. Hence there is no way of carrying out independent tests of hypotheses about the parts for the parts themselves are perceived in terms of those hypotheses and are constituted by them. There is no independent reality to provide a stable reference point. Such hypotheses can be adjudged in terms of their coherence and plausibility within a general interpretation of some frame of meaning or totality.

The nature of human thought and action with its peculiar features of context-dependency, instability and elusiveness, and variability, is well reflected in hermeneutic knowledge which endeavours to grasp it in terms and language that is compatible with the shifting realities of everyday life and the continuous production and reproduction of meanings in communication. Reaching agreement on plausibility and coherence of some interpretation is a problem which, for Habermas, is to be solved in an analogous way to that of reaching consensus in everyday life -- viz. on a dialogue or dialectic model of knowledge.

"Objective" assessment is guaranteed through the participation in dialogue between the inquirer and those that are inquired into in which reciprocal interaction is taking place. If communication is impeded and consensus is disturbed, hermeneutic knowledge is said to fail. Engaging in communication to reach consensus -- not enforced consensus but one to be attained by partners in dialogue -- produces knowledge which is assessed in terms of the extent to which it is instrumental in arriving at such consensus.

This circle of interpretation (hermeneutic circle) is taken by many to constitute the epistemological predicament of all knowledge, including scientific knowledge (TAYLOR, 1971). However, Habermas regards such a conception of hermeneutic knowledge as appropriate to the human sciences and as coming into total contrast with what he takes to be the scientific/instrumental account of knowledge. But his conception of "positivist"science upon which he bases his assessment and critique is one that is now generally accepted to have been discredited in the light of advances in the "newer" philosophy of science. Such developments have led away from the classical empiricist model of science to several post-empiricist accounts of scientific knowledge. They have tended to show that there are essential similarities between scientific and hermeneutic knowledge. To the extent that Habermas disregards these developments the validity of his critique of science as "positivist"/instrumental is seriously diminished.

The claim regarding continuity between the hermeneutic model of knowledge and the views of science which are informed by history or "ordinary language" analysis may be easily substantiated by considering the points of

contrast that are raised in Habermas' comparison between "positivist"/ instrumental natural science (P) and human science (H), and by viewing these in the light of general features of the post-empiricist accounts of science (C). The following five points may be said to summarise the differences between (P) and (H), and reveal the similarities between (H) and (C) (HESSE, 1972: pp.277-280).

I. Theory and observation:

(P): All knowledge is ultimately founded in experience and sensory perception. Empirical facts are possible to describe objectively in some theory-free observation or data language. Validity of statements can be tested objectively and independently of theoretical explanations.

(H): Facts cannot be independent from some more general theoretical interpretation (part/whole relations of hermeneutics) since they are constituted in the light of that interpretation and are reconstructed as a result of it.

(C): There is no independent language of observation detached from the language of theory: all observables are theory-loaded. What is to be taken as data is interpreted in terms of some general way of looking at the world. Fatcs are themselves reconstructed in terms of some theoretical interpretation.

II. Nature of theories:

(P): Theories follow the logic of hypothesis and deduction and their validity depends on the extent to which they correspond to reality.

(H): Theories do not seek deductive explanations but rather attempt to

accurately reconstruct facts; they are assessed in terms of the coherence of their interpretation of the meanings and intentions of social agents within some frame of meaning.

(C): Theories are not models (representations of the world) cast in a hypothetico-deductive schema and assessed independently in terms of correspondence with facts. Rather they are ways of looking at facts and providing plausible and coherent accounts of them. A "currently accepted" theory determines the categories of observation and, in some views, is accepted on wholly non-empirical grounds -- thus being difficult to demarcate from myth or metaphysics.

III. Laws and theories:

(P): Empirical law-like relations are external both to the objects that are related and to the inquirer.

(H): The internal relations that constitute the subject matter of the human sciences involve a double hermeneutic: (a) human relations are constituted in interaction which involves interpretation and negotiated performances of thinking, intentional subjects; (b) such relations are mental for they are the product of interpretation of the investigator which involves human rather than natural categories of understanding.

(C): Law-like relations that are asserted of experience are not external but internal. For facts are constituted in terms of the way in which some general theoretical interpretation dictates their interrelations.

IV. Language:

(P): The language employed in science is exact and can be formalised: meanings of terms are stable and unambiguous and independent of context.

(H): Language in social studies is inevitably ambiguous, imprecise, and context-dependent.

(C): The language of science is essentially metaphorical and inexact; when it is formalised it suffers distortion and is unduly detached from context.

V. Meanings:

(P): Meanings in natural science are distinct from facts.

(H): Facts such as intentional action, social norms, roles, etc. cannot be divorced from their meanings for social actors and are constituted by such meanings.

(C): Scientific theory determines the meanings of facts. Meanings are understood in terms of their coherence within the theory rather than by correspondence with facts.

The above very rough outline indicates that if hermeneutic knowledge is said to be "socially sustained" so is all knowledge (according to post-empiricist accounts) as a"set of agreed conventions" (BARNES, 1977: pp.18-19): ".... knowledge is primarily instrumental, in the sense that it is generated and evaluated in a way that is pre-organised by an interest in prediction and control, and normative, in the sense that it is sustained by a communal consensus which is decided ,

and not a rational necessity ..... All knowledge is actively produced by men with particular technical interests in particular contexts; its significance and its scope can never be generalised to the extent that no account is taken of those contexts and interests".
The nature of scientific knowledge may be viewed as a product of historical development. Representations of reality in theories and models are constructed from already existing "cultural resources" and must be accounted for "as developments within an ongoing cultural tradition" (ibid. : p.20).

The implications from this discussion are that scientific study of social life following a post-empiricist account of science does not appear to be at great variance with the humanistic ideal of hermeneutic knowledge of human conduct in its social and historical context. There are clearly general methodological characteristics of post-empiricist science which correspond to characteristics of hermeneutic methods in the human sciences. But this does not render natural scientific method non-objective or even wholly subjective for hermeneutics seeks "to make explicit the conditions of objectivity of the method of dialogue" (HESSE, 1972: p.288). Moreover, complete identification of the two methodological approaches is difficult to conceive for it is not possible to take nature as a "partner in dialogue".

But to regard nature as known <u>externally</u> by the behaviour it exhibits, and man as known internally through an understanding of his motives, intentions, reasons, feelings, etc. for action would result in complete separation of man from his environment as an ontological belief, which is an absurd conclusion to reach. But it is as unacceptable as the brand of naturalism which rejects any distinction

between man and nature. However neither of these views can be regarded as being sustained by the implications of natural science. If a method for human studies is required to be informed by hermeneutics on the dialogue model of knowledge,(82) the requisite understanding of social life cannot be meaningfully divorced from an understanding of the ways in which man's environment impinges upon his conduct, and vice versa.

The categories of biological theories of evolution, genetics, or ecology -- such as functionality, survival, selection -- are already influenced by the views man holds of himself; and the theories themselves involve human values (HESSE, 1972: p.292). Moreover, it is generally accepted that theories make extensive use of culturally given elements in society, metaphorical and metaphysical: "society interprets itself to itself partly by means of its view of nature". To claim that this is not so is not independent of some view taken of the relationship of man to his environment for it involves acceptance of the possibility to study them completely independently of one another. In this sense nature may be said to participate in the dialectical processes involving communication between human individuals. In its involvement in such a dialogue nature is ascribed meanings which may be regarded as amenable to hermeneutic understanding (ibid.).

7. Epilogue to humanism and introduction to the perspective of science.

The perspectives that were explored in chapters four and five share the views that form and content of inquiry are intimately interlinked; that the method employed in the study of some subject matter imposes a definite pattern upon the way in which it is looked at and influences the theories about it; that cognitive inquiry is not a one-way process either from the environment towards man, as in classical empiricism, or from man towards the environment; that there is an interaction between the knower and the known; that the relationship between theory and "practical" activity involving moral and political choices is a strong and intelligible one unlike what is claimed in views which postulate a sharp separation between facts and values.

Several implications for urban planning were taken to ensue from accepting interdependence of theory and method. The field attempts to relate thought and action upon an essentially social subject matter and hence its methods and procedures of inquiry should be compatible

with the substantive concerns of planning. This immediately raises the question whether the"methods and procedures of natural science" are appropriate in the study of those aspects of social life which fall within the interests of planning; whether some naturalistic programme is compatible with the type of"inquiry" in which planning is engaging in seeking to relate knowledge of the world to action upon it.

The view postulating interdependence between theory and method in planning cannot be reconciled with positivist/naturalist views of knowledge and inquiry. In these views, what is is strictly separated from the realm of decisions,ethics and politics of what ought to be. The result of the latter distinction between is and ought is taken to be a conception of planning founded on the model of technology in which specific goals are supplied externally to the process of inquiry. The task is then one of carrying out disinterested and value-indifferent analysis of facts, apply positive knowledge of the world to predict consequences of combinations of means which satisfy stated ends, assess the results on some measurement scale of utilities to arrive at firm choices,provide these as input information to the actual decision making process which is essentially political and outside of planning proper involving ethical choices, negotiations, and bargaining with diverse interest groups. In this view, the ends of planning cannot legitimately enter into scientific discourse for they are socially relative, matters of individual preference rather than relating to universally acceptable norms.

The alternative conceptualisations of the relationship between knowledge and action that are briefly sketched above tend to reject this view of

technological planning and postulate a much closer relationship between theory and method, facts and values, knowledge and political and moral decision, the planners and the planned. Their humanistic interests guide them to either accept science but confine it to limited and specific functions in the whole edifice of knowledge/action (as in critical theories of society) or to discount the possibility of a scientific contribution in social theorising and acting (as in interpretative approaches).

However, if these serious epistemological and methodological issues are to be settled at all, then the scientific view must also be examined and assessed as to its potential contribution in solving problems of the social world. This is where discussion now turns with certain limited goals of broadly describing the "classical account" of science and "scientific method", reviewing the objections to it that were advanced by writers in the "newer" philosophy of science, and investigating the constraints between a scientific (objective) and a non-scientific (subjective) study of social life. This will lead towards the conception of planning which accepts strong links between theories and models in the field and a scientific approach to acquiring and systematising knowledge of the world of experience -- of society and nature.

In the course of the discussion, increasing attention will be given to the constructs that are known as models for these are often said to constitute an essential component of "scientific method", but also because they are 'par excellence' the most widely employed vehicles for theoretical formulation and conceptualisation in research for urban planning. Planners tend to take a pragmatic view of models

as more or less successful instruments for forecasting, control, monitoring plan performance, and the like and do not often concern themselves with the substantive content of these constructs and the range of implicit ontological and epistemological presuppositions that underlie their formulation and use. However, as will hopefully be shown below, much of human thought and knowledge is based on metaphorical and analogical relations in which models play a prominent role as part of man's cultural inheritance. As will become clear, traditional views of science allow only "objectivist" methods in acquiring and validating claims to knowledge, but this creates a situation in which the ways in which theories are invented are not accounted for (context of discovery), and are often delegated to the realm of psychology and divorced from the logic of justification. Such views are criticised by two different groups:

(a) Those who accept "objectivist" methods but seek to incorporate into "scientific method" an account of discovery as well as justification -- in one set of views which will be discussed in some length, models and analogies provide the linking medium between invention and justification.

(b) Those who take scientific knowledge as not independent of culturally and historically given elements in society and regard science as an essentially social activity with its own rules of community. For them anything known is known as something and is construed from some point of view which is guided by specific interests of inquiry, including prediction and control, convenience and economy, elegance, originality, form and other aesthetic criteria.(80) They advance a view of models which requires them to retain their "as if" quality in order to provide an awareness of the metaphorical element in what is taken as literal.

Models as elaborations of metaphors would regard, say, the Cartesian "machine of nature" in an "as if" rather than literal sense, as a notion useful for such purposes as conceptualisation, discovery, or prediction.

The distinction between those two broad views is often referred to as the dispute between "realism" and "instrumentalism". It relates to a fundamental issue in the philosophy of science which concerns the way in which knowledge is conceived: (i) as the product of disinterested contemplation of individual scientists objectively and passively observing nature and formulating descriptions which are to correspond to it -- much like a picture is to correspond to real appearances; (ii) as a social product and part of the cultural tradition of man, which is developed and redeveloped and adjusted to serve particular interests such as prediction and control -- knowledge whose understanding must be related to the specific socio-cultural context within which it arises. These distinctions are given consideration below in the context of discussing what is referred to as the "method of science.

C H A P T E R S I X

The perspective of science.

C H A P T E R S I X

The perspective of science.

Introduction: statement of intent.

1. Reality, its experience by man, and systems for ordering experience.

2. The order of science: scope and goals of the scientific enterprise.

3. The philosophical study of the sciences.

4. Formal versus empirical sciences and their corresponding methods.

Footnotes to Chapter six.

Introduction: statement of intent.

This part of the thesis sets out to examine aspects of what is often referred to as the "method of science", and hence it is essentially philosophical in orientation and content. It undertakes to penetrate, without venturing into great depths, certain areas of intellectual endeavour which lie in the realm of the philosophy of science. The epistemological and methodological issues that are touched upon in the ensuing discussion have engaged the attention of many gifted minds ever since man began to contemplate and philosophise about the world around him and his own existence. The discourse does not follow the spirit of critical philosophy where attempts to define complex concepts tend to exhaust the efforts of a lifetime. Instead, words are used in a rough, intuitive, commonsensical way, usually in a rather broad sense much as in the thinking of Ancient Greek philosophy. If this approach is accepted -- though potential criticisms for a certain lack of precision and avoidance of technical points may be well aimed -- then it becomes possible to reflect on the subject as a whole. This is an important objective of this part of the dissertation for it is recognised that without such generalisation there can be no schematisation.

The approach that has been adopted towards various pertinent issues is not claimed to be either exhaustive or extensive or proceeding in any great profundity. The fairly well delimited objectives of this

part, as well as those of the thesis as a whole, are being constantly monitored throughout the discussion so as to avoid tempting but unnecessary excursions into associated fields of knowledge. The purpose of this part is to relate what has come to be called "the scientific method" -- which is said to be employed in acquiring knowledge in the natural sciences -- with approaches to the study of the world of man and society, in general, and urban planning, in particular. This discussion precedes the examination of models as devices used in the context of scientific inquiries, which is arranged in Part Two of the dissertation.

More specifically, this part of the thesis is concerned with the scientific enterprise. After introducing science as a system for ordering human experiences of and reasoning about the world of nature and -- on some views -- about the world of man and society, consideration is given to the scope and goals of scientific inquiry and to the way these issues are investigated by the branch of philosophy known as "the philosophy of science". The distinction between sciences dealing with processes of logic and reasoning in general (formal sciences) and sciences whose task is the systematisation of empirical knowledge of the world (empirical sciences) leads to the issue of whether there are identifiable connections between logical form and empirical content of scientific investigations -- or between methods and substantive content of inquiry. Two alternative views of this problem are referred to and their implications are traced for the so-called "methodological debate" in the social sciences and the distinction between procedural and substantive aspects of urban planning. The view of methods

of inquiry that is accepted in this thesis is one which takes such methods not as neutral, atheoretical instruments or techniques of research, but rather as devices whose use entails the acceptance of certain ontological and epistemological presuppositions and hence is not independent of particular ways of looking at the world and of conceptions of science. Some associated arguments from the "newer philosophy of science" are also reviewed and are seen to support this view of methods of inquiry; as are certain perspectives of so-called "humanistic" social thought.

The aspects of "scientific method" that are examined from a more or less neutral philosophical point of view -- to the extent that this is possible -- concern: (i) the general question of whether there is an identifiable "method of science" which is universally accepted and adhered to in the practice of scientific research; (ii) the issue of whether "scientific method", to the extent that it exists, may be said to encompass either a "logic of discovery" or a "logic of justification", or both. Two accounts of "scientific method" are investigated and critically assessed, viz. the inductive-deductive and the hypothetico-deductive schemes of scientific reasoning. An attempt is made to roughly synthesise the various strands of the discussion as it has developed up to this stage by distinguishing between absolutist and relativist conceptions of thr growth of scientific knowledge. Certain advantages -- but also difficulties -- of relativist views are pointed out and it becomes clear that the perspective adopted in this dissertation has been informed by those views. Attention is next focused on certain aspects of the "methodological debate" in the social sciences where naturalist and antinaturalist arguments are reviewed and contrasted.

Finally implications are drawn for the process of acquiring knowledge and the content of such knowledge in the field of urban planning, with special reference to models of urban social-spatial organisation. Planning is viewed as a field of endeavour where the theoretical and the practical not only meet but rather ought to be integrally connected. The "paradigm" of planning which is informed by the technological approach of applied science is examined, and the role of models of the urban social/spatial structure in it is specified. The view of science which permeates technological planning is the "orthodox" logical empiricist account which postulates a sharp distinction between facts and values and parallels this with the divide between means and ends. However, planning on the "model of technology" need not be informed by that particular view of science. Alternative conceptions of science do not suffer from the limitations of the positivist view -- though it is possible that they would face different kinds of difficulties.

1. Reality, its experience by man, and systems for ordering experiences.

Human thought is directed towards knowledge, or towards action, or both. The existence of 'thought' proper entails the ability to formulate questions about knowledge and action in words. By definition, words are parts of a language. A language is a set of signs used by intelligent beings to take cognizance of and to distinguish recurrent elements in their experience and in reality, for a variety of purposes. A language must provide the means for differentiating and/or dividing reality into the parts and sections which represent constant subjects of reference. To identify and discriminate between elements in reality as constant subjects of reference is to distinguish persistent things. Reality[1] must unavoidably be thought of as consisting of persisting things[2] or events (or processes) of different types and kinds.

It appears that no theoretical limit can be set to the number of different ways in which reality could be divided into recurrent elements for the purposes of thought and action. In their attempts to state the relation of man's thought and knowledge to reality most

philosophers have either attempted to set some limits to what can be counted as 'reality' or to what can be counted as 'thought' or 'knowledge'. In the post-Kantian period of philosophy it has been evident that the issue resolves into one question only. This question concerns the conditions necessary for making statements and for making any recognisable distinction between 'truth' and 'falsity' while referring to reality (HAMPSHIRE, 1959: Ch.1). Harré views reality (the world) as consisting of "... numerous, fairly permanent structures, some compact enough to be called things, which are organised in various ways, that is, there are numerous fairly permanent units, having internal structures and being parts of larger structures which persist through certain kinds of change, but not through other kinds" (HARRE, 1970: p.10).

'Event' is a convenient notion under which all possible occurences may be considered. Distinction between classes of external and internal events in relation to man has been suggested by many workers. This rests on the consciousness that man develops as a discrete entity, distinct from his surroundings. External events are taken to be things that occur outside the human body, in the environment; while internal events refer to occurrences within the body, such as emotion, desire, physical pain, thought. An event is considered external or internal according to human perception of its location. The latter has been proved to be inaccurate on many instances (e.g. optical illusions). This approach should not be confused with empiricist theories of perception descending from Berkeley and Hume, according to which human beings are passive observers receiving impressions from 'outside' of the mind, where the 'outside' includes their own bodies. The mistake in this position may be said to

be the failure to acknowledge that the standpoint of the observer is one physical fact among others, and that the observer is always a self-moving body among the bodies which he observes and intentionally manipulates. Human beings must be considered simultaneously as observers, and agents, and as language-users.(3)

An event and its experience by man are not always identical (e.g. mirages, optical illusions). Experience is the perception or awareness of an event by man : it is taken to be more important in structuring man's world than the event(s)that provoked it. Many writers express doubts about the existence of a distinction between internal and external experiences, that is, between experiences induced by internal events, and experiences evoked by external events in the environment of man. Events that are perceived to be located in the external world are heavily overlaid by internal unexperienced events. Immediate stimuli may be external but the experience they provoke depends on internal event(s) (e.g. attitudes that an individual has developed, which affect the perception external stimuli meet). Ultimately, all experience is internal in that man experiences within himself events which may occur either in the environment or internally. One has to explain one's references to one's own sensations and impressions by references to the physical things or events with which they are in some way associated.

The debate surrounding the relations between <u>things</u> and <u>ideas</u> , that is, between the so-called 'real' world of materials and events on the one side, and the ideas about or experiences of the world which exist in man's mind, on the other side, has a long and thorny history dating back in clear form at least to Plato in the fifth

century B.C. It is inevitable to assume some position, implicitly or explicitly, with respect to this debate in the discussion of a number of subjects that are touched upon in this dissertation. On one set of views which might be referred to as empiricist, whatever the nature of the 'real' world outside men's minds, we know nothing about that world until we receive information about it. All such information is derived initially through our senses, and we think and behave about the 'real' world solely on the basis of this information. Although non-sensory informational inputs (e.g. extra-sensory perception or divine revelation, if and to the extent that they operate) cannot be considered 'a priori' impossible, they code their informational content in the repertoire of concepts that are already familiar to the recipient. Therefore, on this account, the basic premiss is that human behaviour (in terms of thought and action) is based on our information about things and not on the nature of things.(4) We thus appear as "spectators" of our world: the etymology of "theory"(θεωρός= spectator in Greek)emphasises this point.

This view of knowing has informed the extreme (and rather dated) logical positivist or logical empiricist theses which claim that all knowledge and understanding can be developed exclusively through sense experiences and their logical and mathematical treatment, independently of philosophical presuppositions and introspective and intuitional efforts (JOAD, 1950: pp.21-31). This positivist school of thought of the late 1920s by invoking a principle of verification declared all discourses about realms that lay beyond experience, in short about all metaphysics, as meaningless since they were composed of statements incapable of empirical verification.

One of the main problems of this position was faced in establishing the way in which such a principle could be formulated. Modifications of the early positivist accounts by contemporary philosophers, such as (HEMPEL, 1956: pp.41-63), (CARNAP, 1956: pp.38-76), (NAGEL, 1961), and (BRAITHWAITE, 1953), suggest that those early views were unproductive.(5)

The positivist position is further challenged by several recent views which question the meaningfulness of the concept of an observation language (as opposed to that of a theoretical language) in the absence of a theory. It is purported that the presuppositions of all methods employed by philosophers in their dealing with theoretical terms, that is, assumptions that the latter have to be explained by means of observation terms, etc. are false. Particularly, it is suggested that there does not exist , in any important sense, "... a distinction between two languages", that is, between the so-called theoretical and observation languages, but rather "... different kinds of uses within the same language .... The fact that we somehow understand, learn and use observation terms does not in the least imply that the way in which we understand,learn and use them is either different from or irrelevant to the way we understand, learn and use theoretical terms" (HESSE, 1974: pp.9-10).

Experiences are generally manipulated by intelligent beings into meaningful patterns by combining and storing information received in different spatio-temporal contexts so as to enable man to have more information at any one moment in time than is being received at that moment through his senses. Is has not been possible to identify the precise reasons why the need should prevail to order experiences.

However, the existence of comprehensive ordering systems explaining experiences in a wide range of cultural milieux is ample evidence of the universality of this need.(6) The necessity to order man's experience continua is recognised not only as a primarily psychological need but also as a need which has deep physiological and biological bases (KUHN, 1963/66 : pp.27-28), (ABLER, et al., 1971: p.8).

Ordered experiences (without regard to context) are those which arouse no questions in the mind. The most important way of establishing order is to attend to an event and answer the questions which its experience evokes. Art, theology, the humanities, and science are more or less systematic bodies of thought which attempt to answer questions about human existence and its experimental consequences. Such questions are applied to past, present, and potential future experience. A set of satisfactory answers to the set of all possible questions about all possible events would produce a state of complete order. That this state does not exist in reality, and cannot exist given the nature of human thought, does not negate its value as an ideal frame of reference.

Even simple, straightforward description of reality (without any attempt at explaining) is essentially inexhaustible. It is, in principle, impossible to ever come to the end of it and complete the description. This is true not only because it is not possible to set limits to reality or give a possible meaning to the words: "all things that there are have been identified". More strongly, it is not possible even to give sense to the words: "all things that there are in this room have been identified". The inexhaustibility lies in the nature of description and identification, however restricted they may be.

Every object must exhibit different appearances from different points of view; and every object, including persons who are language users, agents, and observers, has a history of changing relations to other things in its environment. To state what a particular object is cannot be the same as to describe its appearance from various points of view. Hence, a description of the appearance of an object from a certain point of view only constitutes evidence as to what it is when it is taken in conjunction with a statement of the actual situation of the observer as an object among other objects (HAMPSHIRE, 1959: Ch.I).(7)

The stages in which order is imposed by man on his experiences may be approximately represented in a conceptual scheme.(8) Because events become experiences when they attract the attention of the human senses, the latter are said to constitute the effective limit of human penetration of the world both external and internal to man.(9) This sensory frontier separates the universe of possible events from those events that are in fact experienced by man. The frontier can be depicted by a plane, so-called "plane of primary experience or perception" (or the P-Plane), which forms the starting point of the scheme for ordering experience. The P-Plane is peculiar to each and every observer.(10) Experiences accumulate but cannot become intelligible until they are preliminarily ordered by means of "constructs".(11) "Reality and experiences of it cannot be thought about unless there exist rules that correlate particular groups of signs with particular recurrent elements in reality and experience, in such a way that any familiar use of a particular group of signs will be taken as a reference to some particular element in experience(HAMPSHIRE,1959:p.11).

The process of forming constructs involves the use of rules of two systematically interrelated types: (i) rules of classification [12] single out elements in reality as being of the same kind, and identify recurrent kinds of "thing"; (ii) rules of individuation [13] single out one specimen of a certain kind from another, and identify the same one as recurring or appearing again.[14] Generalisations from larger numbers of experiences assume the form of abstract ideas without empirical content (e.g. location, volume, amount, pressure). These are called concepts [15] and provide the means of manipulating "constructs". Most concepts can be reduced to two megaconcepts: "number" and "relationship". Any experience or "construct" may have "number" and may be related to other experiences of "constructs". Concepts are developed by means of combinations of the two megaconcepts. Thus, "constructs" are interconnected both with each other and with concepts through relationships. The conceptual scheme of the human thought processes is one illustration of the way man organises the world. Within this schema, it is possible to move directly from events and immediate experiences to classes of experiences and relationships among these. The development of systems of thought emerges as the result of the accumulation of increasingly complex relationships between classes of experiences. Systems of thought incorporate, at the same time, the most elementary experiences and the most abstract concepts.

A very wide variety of types of relationship networks can be constructed according to the type of order that is being adhered to. The same "constructs" may be connected through different structures of relationships, depending on the system of intellectual order that is employed. Thus, different order modes will tend to produce

distinct networks of relationships. There are, generally speaking, four major systems of ordering experience now in use: (a) theology attempts to answer ultimate 'why' questions[16] and to develop the implications of its answers in the realm of daily life; (b) aesthetic and emotional order relates to the realm of artistic experience and interpersonal relationships; (c) the system of order based on common sense is applied to secular social and economic activities; and (d) scientific order attempts to explain a very wide array of events in the external world and, increasingly, experiences which arise within man.

Although separated for purposes of identification and discussion, these four systems of order are not always separable due to their extensive overlapping and interpenetration. There exists a fundamental unity among all ordering modes because all are concerned with providing answers to the questions that man raises about his existence in the world and its implications. It is not possible to assess the superiority of any one system of order over the other unless the realm of experience to be ordered and the purpose of the order to be established are specified. None of these systems possesses inherent preeminence over the others, but usually they operate in a complementary manner as experiences are categorised into classes each of which is best dealt with through a particular system.

2. The order of science: scope and goals of the scientific enterprise.

Ever since the concept of "science" was introduced into the realm of human thought there has been a proliferation of attempts to characterise or define it. The relevant literature abounds with several, often conflicting points of view, and it is not difficult to conclude that a definition of "science" is a complex matter. Although the aims of this thesis do not include the provision of a "once-and-for-all" definition of science, it is impossible to avoid a discussion of the issue when the purpose of this section of the thesis is to examine "scientific methodology" and the role of models in it. The task of defining "science" is rendered more complicated by the fact that the meaning of science is not fixed: the evolution of science over the centuries suggests that "science" is a dynamic concern and its meaning and significance changes with successive ages (HANDY, 1964: p.12). Therefore, a definition which appears correct at one point in time may become defunct or erroneous at a later time period.

The attainment of an ultimate definition of science seems to be an elusive if not unreasonable goal to pursue.(17) However, it is necessary to establish some common understanding on the concept and recognise the inadequacies involved. In the past, the word "science" referred

alternately to the study of certain specific subject matters or to a body of knowledge. Thus, physics, geology, chemistry, etc. were considered as science by virtue of their cognitive content. However, the continuing expansion and specialisation of knowledge has posed serious problems as to whether the emerging fields should be classified as scientific or non-scientific by the earlier criterion. An alternative definition of science in terms of a body of accurate, and systematically organised knowledge tends to be true not only for strictly scientific knowledge but also for other collections of information, such as the flight schedule of an airline company, the data contained in a telephone directory, or even a set of systematic observations on a real-world phenomenon that have not yet been integrated into some conceptual framework (HELMSTADTER, 1970: p.7).

Because science has evolved from ordinary, 'common sense' knowledge associated with man's daily experiences in his environment and in himself, its discriminating characteristics are best illuminated when it is contrasted with what is generally acclaimed as 'common sense'. Admittedly, the line separating beliefs labelled with the familiar but vague term of 'common sense' from knowledge which is recognised as 'scientific' is not very sharp.(18) However, each of these words possesses a nucleus of characteristic meaning. Thus, in contrast to common sense (NAGEL, 1961: pp.3-14):

(i) science emerges from the desire to provide explanations that are both systematic and controllable by factual evidence; and is distinctive in that it seeks to establish through a pattern of inquiry some relation of dependence between propositions

superficially unrelated;

(ii) science introduces refinements into ordinary conceptions by the process of exhibiting the systematic connections of propositions about matters of common knowledge; and circumscribes the range of valid applications of such knowledge;

(iii) science is not characterised by conflicts between judgments to the extent that common beliefs are -- though there often emerge many disagreements regarding particular interpretations of one and the same set of empirical observations in some field of scientific endeavour;

(iv) modern science does not employ vague terms of ordinary speech but introduces increased determinacy in scientific statements and incorporates them into logically integrated systems of explanations, and thus obtains greater discriminating power in its testing procedures, and augments the sources of relevant evidence for its conclusions;

(v) science directs its inquiry to the relations of dependence between things irrespective of their bearing upon human values; and

(vi) science, as a matter of principle, exposes its cognitive claims to repeated tests against critically probative observational data, obtained under carefully controlled conditions, aiming at eliminating known sources of error. Scientific conclusions are the products of inquiries conducted in accordance with a definite policy for obtaining and assessing evidence, that is, what has come to be known as "scientific method".

Thus, to sum up, science claims that (a) scientific statements about the real world are 'truer' than any non-scientific ones; (b) such truth claims can be actually tested; (c) shortcomings in scientific statements can be discovered; and (d) that these shortcomings can be corrected (BUNGE, 1967: p.29). Extrascientific statements (or speculations) do not appear to be as modest in their claims, and to yield as much in terms of their content.

The preceding list of differences between scientific and ordinary, common sense knowledge suggests that the 'substance' (object; specific subject matter; body of knowledge) cannot by itself be a distinctive feature of all science[19] without the 'form' (process of inquiry) which, in some views, emerges as a universal and unique characteristic of science. Thus, "..... the peculiarity of science must reside in the way it operates to obtain a certain end .... " (BUNGE, 1967: p.5). Indeed, the opinions of most contemporary authors on the subject of defining 'science' converge on the conception of science as a process of inquiry (which represents a cluster of reliable methods of research, observation, and manipulation); as well as a body of knowledge which has been acquired through such a process (SPRAGUE, 1974: p.279), (CAMPBELL, 1952: p.1),(WARTOFSKY, 1968: pp.23-25).

Any particular science can be viewed as a collection of theories, and each theory consists of a set of statements associated with proper methods for their validation. In this context, "... science can be conceived as the sum-total of all particular sciences, and hence as an organised system of theories and their respective validating methods. The methods are as indispensable a part of

science as are its theories" (MEHLBERG, 1958: pp.64-65). In general, the scientific approach to acquiring knowledge[20] is said to be composed of a process of inquiry (for which the term 'scientific method' has been used), and of'the goals' towards attainment of which the method is being adhered to by the scientists (BUNGE, 1967: p.6).

The process of scientific inquiry is controlled to the extent that it is efficiently directed toward the achievement of desired objectives (ACKOFF, 1962: p.3). Unlike what has been suggested by many writers, science may not be thought of as having a central, definitive goal.[21] "Science has a plurality of coordinated objectives ..... some basic and theoretical (explanation, prediction, and retrodiction), and others consequent and practical (control)" (RESCHER, 1970: p.131). This position is also supported by (BUNGE, 1967: pp.25-26) where it is contended that the aims of science are: "Primarily, to increase our knowledge (intrinsic or cognitive goal); derivatively, to increase our welfare and power (extrinsic or ulitarian goal)". A similar view is put forward by (CAMPBELL,1952: p.1) : "First, science is a body of useful and practical knowledge and a method of obtaining it .... In its second form or aspect, science has nothing to do with practical life, and cannot affect it except in the most indirect manner, for good or for ill. Science of this form is a pure intellectual study ..... it appeals to nothing but the disinterested curiosity of mankind".

This statement points to the much debated distinction between 'pure' science, if a purely cognitive goal is pursued, and 'applied' science, if a practical end is aimed at. This leads directly to the traditional

conflict between the doctrines of scientific realism and instrumentalism. Realists hold that science principally attempts (or ought to attempt) to describe the world as it really is through the formulation of scientific theories which are about independently existing theoretical entities (e.g. electrons, protons); thus, they stress the theoretical goals of science (description and explanation of the real world). On the other side, instrumentalists tend to stress the practical goals of science, that is the goals of prediction and control, and argue that science is mainly a provider of tools for predicting and controlling observed phenomena -- without necessarily affording any materials for describing the real world (RESCHER, 1970: p.134); (SMART, 1968: p.138); (RYLE, 1949: pp.120-125); (TOULMIN, 1953); (NAGEL, 1961: Ch.6); (SPECTOR, 1965: pp.121-142); (POPPER, 1963: Ch.3); (FEYERABEND, 1964: pp.280-308); (HEMPEL, 1958: pp.37-98). Each of those two contrasting accounts of science takes a coresponding view of models and of their role in the scientific enterprise (cf.Part II).

Proceeding beyond the purely manipulative issue of control towards the purely cognitive aspects of science, that is, those of prediction, explanation, and retrodiction, it appears that the principal consideration is not confined to any one of these aspects as being predominant over others. The characteristic that is common to all cognitive concerns of science is best described as essential knowledge of laws in terms of which explanation, prediction, and rational retrodiction become possible; what has been called 'systematisation' (RESCHER, 1970: p.133). Laws can operate in the absence of all prospects for explanation, prediction, etc.; while these latter tasks of science essentially rely upon laws for their accomplishment. The establishment of laws that rule the functioning of natural

processes is basically a descriptive task and appears to be the basic element in scientific understanding that enables scientists to structure their perception of the past and to guide their expectations for the future (RESCHER, 1970: p.135). At the present time there exists a considerable number of problems and questions (e.g. those involving ethical considerations) which cannot be fruitfully investigated by science because of their nature. Based on such reflections many authors have attempted to discuss the 'limitations of science' or the 'reach of science', but the results of these elaborations proved far from successful in adequately defining the 'limits of scientific inquiry'.

Indeed, numerous issues with which science concerns itself today were, at one time or another in the past, claimed to be outside the reach of scientific investigation. In his analysis of the limits to scientific explanation, Rescher rejects the thesis that "science can explain everything" and substitutes for it the view that "science can explain everything explicable". This restructuring, he claims, is not imposed by any reason of principle or any theoretical boundary of ultimate fact,(22) but rather because modern science itself reveals certain inexplicable facts, e.g. in the context of irreducibly stochastic processes (RESCHER, 1963: pp.325-345). According to (MEHLBERG, 1958: p.3,p.65), the tools that the scientists possess or are likely to develop and the ways they handle these (i.e. scientific method) rather than scientific information appear to be the determining factor of the potential of science to answer relevant questions. Thus, the class of all theoretical and practical questions that are inherently impossible to answer satisfactorily by recourse to any actual or merely discoverable scientific method

should be considered to define the 'limits' of science. Further, the class of all questions that are so accessible to scientific method would suggest the 'range' of science.

3. The philosophical study of the sciences.

The issues involved in establishing the 'range' and the 'limits' of science are perplexed not only because of the way in which the relevant questions are formulated (e.g. the use of vague and ambiguous terms such as 'scientific method', 'theoretical' and 'practical' questions, 'potential' of science to answer a question), but also because of the bias that prevails in discussions of the social effects and value of science. Admittedly, science emerges today as both a universally decisive and universally unfamiliar element of human culture. Unfamiliarity with the concepts, information, methods, and equipment which scientists have accumulated over centuries of intensive activity is apparent among both the lay public and, to a lesser extent, among the scientists themselves; and it is due mainly to the increasing specialisation of scientific endeavour indispensable for the increased speed of the advancement of science (MEHLBERG, 1962: p.275). Anticipating this situation over a century ago, Comte advocated for a philosophical and broadminded "science of science" which would concern itself with the study and clarification of the fundamental conceptual issues about the sciences (COMTE, 1830/1843).[23]

There exist generally two types of questions which concern any field of human knowledge: (a) questions <u>in</u> that field, which are first order or factual questions relating to the disciplinary or professional context of the field; and (b) questions <u>about</u> that field, which are conceptual or second order questions referring to issues about the cognitive status of the field (EMMET, 1964).
In the case of the sciences, the substantive problems within specified sciences constitute the subject matter of the professionals of the sciences concerned, whereas the latter type of questions lies in the realm of the philosophers (RYAN, 1970: p.4). These are structural problems about science as a whole (SCRIVEN, 1966: p.84).

Philosophers have always been interested in the sciences for they have been traditionally concerned with other major areas of man's intellectual activity, such as the arts, ethics, and religion. However, in the last half century, philosophical activity has been characterised by a proliferation of substantial studies in an area which has come to be called the "Philosophy of the sciences", and which is probably the fastest growing branch of philosophy nowadays (BUNGE, 1973: p.1). Both the method and subject matter of this field of endeavour cannot be considered novel but fall within the domain of philosophy which is generally concerned with the organisation, nature, and modes of generation of the products of intellectual effort.(24)

Although the philosophy of science does not appear to possess a well-defined area of analysis, it is not impossible to delimit its boundaries empirically by content, that is, by listing the actual problems that are being dealt with. Broadly speaking, the philosophy

of science bears upon three main groupings of questions about the sciences (BENJAMIN, 1950/1965: pp.542-547); (KYBURG, 1968: p.2):

(i) The problems concerning the motivation for engaging in scientific activity,[25] and those relating to the analysis of basic concepts and presuppositions of the sciences.[26]

(ii) The miscellaneous issues associated with the general philosophical implications which the scientific enterprise has, either in its content or in its method, for the other aspects of human life.[27]

(iii) The questions related directly or indirectly to a consideration of the method of science.[28]

These groupings tend to overlap to a great extent and exclude some problems that pertain to the general field. Based on this listing of issues, it can be suggested that the philosophy of science may be conceived as having two main components. The first relates to an analytical and methodological discussion about science and concentrates on the study of patterns of scientific arguments, of ways of testing scientific theories, of the nature of laws and theories, of ways in which scientific concepts are defined or otherwise introduced, and of scientific method. The second component involves the application of scientific knowledge to the solution of problems generally recognised as philosophical[29] (SMART, 1968: pp.4-5) and thus presents philosophy of science as a synthesis of special sciences.[30]

Despite the significant contributions that modern philosophy of science is making to the clarification of scientific concepts, to the analysis of the methods of the sciences, to the study of

the logical structure and semantical organisation of science, as well as to the general results of scientific efforts, there exists some disagreement predominantly among practising scientists as to the relevance of philosophy in the course of routine scientific activity. It is often claimed that, by moving to abstract levels of analysis, philosophical studies of science tend to look at what scientists do in practice as mere technical detail, and concentrate more on general questions which frequently emerge as philosophical paradoxes that are of little direct interest to scientists (DIESING, 1971: p.2). Admittedly, modern philosophy of science has turned out to be a Pandora's box which, once opened, released "puzzling monsters" (COHEN, and WARTOFSKY, 1974: p.vii). However, to object to its important contributions to science implies a misunderstanding of the primary purpose for which the philosophical study of the logical structure of science is undertaken. Such study is not intended, in the first place, as an aid to scientific research nor does it form a descriptive manual of scientific approaches.
"The logic of science is a branch of philosophy, specifically of epistemology or the theory of knowledge, and also of ontology or the theory of what kinds of things there are. It is not surprising if the practice of science largely passes these questions by.
They have, after all, been controversial for many centuries and modern science in part developed as an enterprise that was neutral with respect to them and could afford to ignore them. Science has been remarkably successful in pursuing its own aim independently of philosophical disputes. But that is not to say that the philosophical critique of the foundations of science itself can ultimately be ignored, for that critique is concerned both with the understanding and justification of the aims of science itself,

and with the existence and character of modes of knowledge other than the scientific" (HESSE, 1974: p.7).

The foregoing discussion indicates the existence of a substantial body of intellectual acitivity focusing on the study of the methods of science both from the point of view of the scientists and from that of the philosopher. A range of such views will be examined in following chapters, and an attempt will be made to explore the accepted accounts of scientific method and to investigate the role of models in these. That it is necesary to follow this trajectory in the analysis of the role of models in spatial planning may not be immediately obvious. However, to control the use of scientific tools, as models are, in a field where intellectual endeavour has so far been predominantly non-scientific, it is essential to understand the philosophical and methodological assumptions upon which the use of these rests. It appears that the most appropriate way to make these assumptions explicit is to analyse the structure of what has come to be called "the scientific method". It is purported that such an analysis will ensure that assumptions accepted with respect to certain scientific tools used in spatial planning do not conflict with the broader assumptions employed in establishing standards for rational discourse and inference.

4. Formal versus empirical sciences and their corresponding methods.

The various judgments that human beings make are said to be categorised into three types (KEMENY, 1960: p.292): logical, factual, and value (or evaluative) judgments. The content of each of these forms of judgment may be described as follows:

(i) Logical judgments are based on certain premises which may be true or false; if they are internally consistent they specify what other propositions or theorems follow of formal necessity. The sciences which determine criteria and methods for correct logical judgments are formal logic and pure mathematics (including geometry).

(ii) Factual judgments are concerned with establishing the truth or falsity of propositions with respect to the facts to which those propositions purport to refer. The sciences whose aim is to set forth criteria and methods for making correct factual (or descriptive) judgments are the empirical natural sciences and the social sciences in their purely descriptive role.

(iii) Evaluative or value judgments attempt to evaluate the facts after they have been correctly or incorrectly described. Fields whose task is to provide criteria and methods for making correct evaluative judgments are personal ethics, the social sciences

> (including politics, sociology, economics, urban planning, etc.), law, and even religion, in their evaluative -- as distinct from their descriptive -- function (NORTHROP, 1963: p.3).

If the above distinctions are agreed upon, the commonly accepted grouping of individual sciences into formal (or rational) and empirical (or factual) sciences (CARNAP, 1953: pp.123-128) becomes justified. Formal sciences are those which have no empirical content but which are systems of thought. They are, sometimes, viewed as branches of philosophy (SALMON, 1973), or as non-empirical sciences (HEMPEL, 1966). Although they may be applied to empirical phenomena, and they demonstrate their greater utility in such applications, they do not concern themselves with any class of events or experiences. Their application to the empirical sciences can be described metaphorically as the provision of 'forms' to be filled with an unlimited assortment of contents, both factual and empirical; and this act of 'form filling' represents the establishment of correspondences between the forms, on the one side, and events or experiences at any level of reality, on the other side. Because mathematical and logical structures can be evaluated without reference to the constructs to which they are applied, they greatly enhance the power to manipulate those constructs. Validity of manipulations can be checked without distraction by content. Contrary to the formal sciences, the factual or empirical sciences produce knowledge about the world in the course of their operations: their content is directly empirical. They are also concerned with explaining experiences, and their results are subject to testing: findings can be supported or weakened by empirical events. This distinction accounts for the differences in the object or theme of

the respective disciplines, and also for the difference in the type of statements. The division further answers to the difference in the method through which verifiable statements are checked (BUNGE, 1959: Ch.2).

It should be added that, in some views of science, judgments of the third type referred to above, that is, value or evaluative judgments, are not considered acceptable as legitimate kinds of statements within the framework of scientific discourse. The desire for greater rigour within science led to the nineteenth century efforts to eliminate metaphysical elements from science, as value judgments are considered to be (e.g. the works of Ernst Mach, Heinrich Hertz, Pierre Duhem and Henri Poincaré are notable in this respect). This view has prompted certain empiricist philosophers to distinguish the verifiable, factually meaningful statements of science from the unverifiable and allegedly factually meaningless statements based on metaphysical speculations. The latter were rejected as uninformative. In Popper's view, the distinction between scientific and metaphysical statements can be based on the grounds that the former are, at least in principle, falsifiable whereas metaphysical statements are unfalsifiable even in principle (POPPER, 1963:pp.253 ff.).

However, there is a growing body of literature which indicates a marked diversion from the position expressed above. Thus, it is surprising to find, in the more recent years, a revived interest in metaphysical speculation precisely among those philosophers who are concerned with the philosophy and history of science. A number of these workers have devoted much time and space to showing how metaphysical speculations, and even myths, may develop into

or contribute towards the development of scientific theories (POPPER, 1952: p.124); (VAN MELSEN, 1952); (CASSIRER, 1956); (WATKINS, 1957); (KÖRNER, 1957: p.97); (FEYERABEND, 1957/58). In particular, Körner goes as far as to suggest that metaphysical statements function in science as 'directives' or 'regulative principles' (KÖRNER, 1959). He distinguishes "between two kinds of metaphysics, namely regulative which, roughly speaking, consists of proposals of rules for the construction of theories, especially scientific theories, and speculative metaphysics which comprises all kinds of philosphising other than regulative and analytical philosophy..." (KÖRNER, 1966: p.232).(31)

Logical or mathematical truth or validity or correctness has nothing to do with empirical truth or validity or correctness (COHEN and NAGEL, 1934/1963: p.23). Formal sciences are not concerned with explaining experience nor are their conclusions subject to empirical confirmation. The criterion against which logic and mathematics are evaluated is that of the absence of self-contradiction. Any logical or mathematical system is derived from certain fundamental ideas (axioms). Using these basic assumptions, some conclusions are valid according to the adopted rules of manipulation and others are not valid. The criteria by which formal sciences are evaluated are internal to the sciences and are based largely on consistency, although factors such as economy(32) and elegance are often significant. The formal sciences are, in general, deductive sciences (BUNGE, 1959: p.32). Experience plays some suggestive role which is limited to the formulations of the basic presuppositions (axioms) of the formal sciences.

The set of postulates, definitions, rules of formation of meaningful expressions, and rules of deductive inference, all are necessary and sufficient to demonstrate a theorem in the formal sciences. Therefore, truth in logic and mathematics consists in the coherence of a given statement with a previously admited system of ideas; and is not absolute but relative to that system.(33) In comparison to the formal sciences, the factual (or empirical) sciences appear to differ on several important grounds. Firstly, their statements do not contain only logical valiables which are neither true nor false (i.e. symbols), but comprise interpreted signs. Secondly, the logical consistency (or rationality) of a factual statement, that is, its coherence whith a previously accepted system of ideas, e.g. logic, is necessary but not sufficient to establish its truth content. Finally, besides possessing logical consistency, factual statements must be testable in experience (POPPER, 1959/72) : pp.41-44); (HEMPEL, 1965: p.141).

The basic concept behind the principle of testability is that a general statement purporting to explain phenomena should enable the derivation of 'basic statements', that is statements about matters of fact, which could subsequently be compared with actual descriptions of observable aspects of the same phenomena. This process of experimentation would result in confirmation of the statement (or theory).(34)

In order to maintain that an empirical statement is (probably) true, propositions relating to observational and/or experimental data are required to support the statement. Results from such testing of a factual statement against experience do not represent

a demonstration or proof in the manner of the formal sciences (BENJAMIN, 1950/1965: p.543). They are, for the most part, provisional in the sense that further study could furnish better approximations to the conceptual reconstructions of the segment of reality that relates to the factual statement concerned. Therefore, while formal statements and theories can reach a state of perfection (relative to the specific system of ideas upon which they are based), empirical statements and theories are essentially defective, in the preceding sense, since they only meet the necessary condition for perfectibility: they are never proved by their conforming with experience but only rendered increasingly probable (according to number and variety of confirming instances, or due to their successfully passing falsification tests).

The use of highly abstract concepts in statements concerning empirical scientific theories tends to generate problems during the process of their testing against observed facts since there are often no observable counterparts for the abstract concepts. This has led philosophers of science, especially logical empiricists, to introduce the well-known and extensively debated dichotomy between observation statements and theoretical statements -- often referred to as the "dual-language thesis ".(35) On this account, all theoretical concepts should be defined or entered into empirical theories operationally; what has been called "the operational imperative", first expounded by (BRIDGMAN, 1927).(36) Philosophical assessment of " the operational imperative" has been, for the most part, relative to the positivist account of scientific theories. This is eloquently expressed in (PUTNAM, 1962: pp.240-251); and his analysis refers to what is often called "the received view on the role of theories".

The "operational imperative" is interpreted, within the positivist view of theories, as the requirement that theoretical terms be defined as explicit definitions in terms of an observation vocabulary which specifies various operations and possible outcomes resulting from such operations being performed (HEMPEL, 1965: pp.123-133).
On the basis of arguments purporting to demonstrate that: (i) the positivist account of theories[37] is untenable under specified conditions and should be rejected (ACHINSTEIN, 1968: Ch.3-6); (PUTNAM, 1962); (SUPPE, 1971: pp.57-76); (SUPPE, 1972[a] : Part I, Section II-B);[38] and that (ii) the "operational imperative" is, consequently to (i) , also untenable (HEMPEL, 1952: p.41); (HEMPEL, 1965: pp.123-133), most philosophers of science have rejected the "operational imperative", with few exceptions mainly among scientists practising in the biological and social sciences.

The above differences in kind of statements, referents, and method that may be said to distinguish the formal from the factual sciences precludes their joint examination with respect to matters concerning the methods employed in the task of achieving systematic knowledge of the world of nature and, by potential extension, of the world of man and society. The argument that there exist at least two types of scientific method, that is, the logico-mathematical or formal method pertaining to the rational sciences, on the one side, and the empirical or experimental method employed by the factual sciences, on the other side,[39] might be maintained provided that it is acknowledged that the empirical method makes use of formal methods of reasoning. This position is further corroborated by Mehlberg who, in setting out the limiting cases of the scientific method, views the purely inferential procedures which constitute the logico-mathematical

method as representing a limiting case of the method of science, at the one extreme, characterised by a vanishing observational component. At the other extreme, the limiting case of the general method of science may be depicted by non-inferential procedures of the empirical sciences (e.g. direct sense-perception, introspection), characterised by a vanishing inferential component. Intermediary cases also exist, e.g. fact-finding methods based on measurement or on indirect observation (i.e. through appropriate instruments), but are located rather closer to the non-inferential limit of the "scientific method" because they involve extensive observation and a specifiable minimum of inference (MEHLBERG, 1958: p. 76). Consideration of the subject matter of this chapter essentially directs the ensuing discussion about scientific method towards the empirical rather than the formal sciences. Consequently, all further references to the "method of science" will denote the "experimental method" as this is applied within the context of the sciences of nature and, on some accounts, within that of the sciences of man and society.